# The Journal of the American Medical Association

**Published Under the Auspices of the Board of Trustees**

VOL. 82, No. 3 CHICAGO, ILLINOIS JANUARY 19, 1924


## CONGENITAL DISLOCATION OF THE HIP

### A STUDY OF TWO HUNDRED AND SEVENTY-SEVEN DISLOCATIONS *


ROBERT SOUTTER, M.D.
AND
ROBERT W. LOVETT, M.D.
BOSTON


The analysis presented here, based on the records of the Children's Hospital, Boston, deals with 355 consecutive operations performed on 277 dislocated hips of patients admitted to the orthopedic service of the hospital between 1912 and 1920. In many cases more than one attempt at reduction was made, so that the number of operations is larger than the number of dislocated hips. The study is offered with the view of formulating just what results were obtained in a fairly large series of hospital cases in which operations were performed by the members of the orthopedic staff during a period of many years.

It has seemed unnecessary to publish all the detailed tables on which this study has been based, as by their number they would prove confusing. Many of them deal with the motions of the hip; atrophy; methods of gait; analysis of the roentgenograms of the pelvis, the acetabulum, and the head and neck of the femur; and the development of each case, classed according to sex, age, operation, reoperation, etc. In order not to waste the time of the reader, only the more important and interesting deductions from these tables will be presented.

The report is based on all available cases whenever a record could be found. No case is included that has been reduced less than two and one-half years. Many private cases, if they could be traced to obtain final examination and roentgenograms, would materially improve our statistics; but the data have been difficult or impossible to obtain in these cases. In the number are included as failures many cases in which the aftertreament was not followed out and others that should have been reduced a second time but in which the patients disappeared from the clinic and returned many years later. All cases were studied as to the previous condition, operative treatment, after-care, and final result two and one-half years or more after operation.

The roentgenograms before operation, after operation and long afterward, were considered and analyzed. Statistical tables, omitted in this paper, were made, from the clinical standpoint and from the roentgen-ray point of view, of the bones forming the joint, so that the development of the acetabulum and of the head and the neck of the femur might be studied, the final condition of the bone being compared with the original condition before operation. To make the study more complete, the development of the bones forming the joint was studied in normal children at corresponding ages from roentgenograms in cases in which they had been taken for purely medical conditions.

#### NUMBER OF DISLOCATED HIPS

For the purpose of this report, 277 hips were considered. Of these 277 hips, 235 were personally examined a considerable time after operation, leaving forty-two unaccounted for. Of the 235 hips examined, the results were successful in 180 after the primary operation and in seventeen after secondary operations, making 197 successes, or 71 per cent. of the total number of hips under consideration, and 83.8 per cent. of the hips personally investigated. Of the forty-two results not reported, some are known on good authority to have been successful; it seemed fairer to count them all as failures, which we have done in obtaining the figure 71 per cent. This percentage is undoubtedly definitely too low.

#### METHOD OF TREATMENT

The method of treatment at the Children's Hospital has consisted of (*a*) manual reduction and of (*b*) reduction by the Bradford machine.

(*a*) Manual reduction alone was used for the younger patients and in apparently easier cases; the Bradford machine, however, was always at hand to be used, if necessary, in the more resistant cases.

All methods of manipulative reduction have been used, beginning with the Lorenz technic, which has been gradually abandoned as being unnecessarily rough and forcible in cases which we felt could be more safely and effectively loosened up by the Bradford machine. In its place, simple reduction methods have been used either as the whole procedure or after stretching by the machine. The manipulations of Hoffa, Ridlon, Davis, Schanz and others have all been tried, leaving this conclusion in our minds: *The operation consists in fitting the head of the femur into the acetabulum, and the method that does it with the least objectionable trauma is the best; but it is recognized that stretching after reduction is essential and that the leg on the side of the reduced hip should be flexed to a right angle and abducted to lie in the frontal plane of the body.*

(*b*) In reduction by the use of the Bradford congenital hip machine, the pelvis is firmly fastened in the

* From the Orthopedic Service of the Children's Hospital.

* The publication of this work has been made possible by the Helen Hallett Thompson Fund for Research.

machine, and the flexors, adductors, and all the muscles are stretched by traction, with the hip in various positions with and without inward rotation. The lever is then used which pushes the trochanter forward with sufficient traction on the leg to relieve strain on the head and neck. In this way operative trauma on the head and neck from leverage is changed to suit the requirements during the process of stretching which precedes reduction. After reduction, the capsule is stretched to free the head of the bone, thus making reduction more stable.

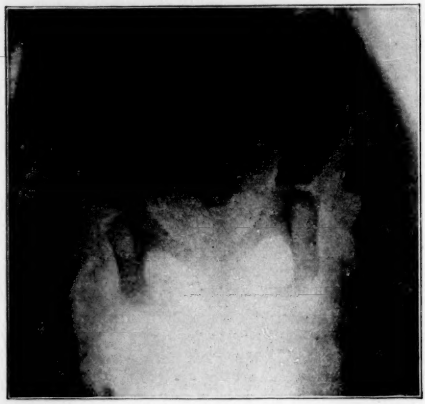


Fig. 1.—Double dislocation: well formed capital epiphysis; poor acetabular shelf.

The machine, when properly used, will markedly decrease the leverage necessary and lessen the traumatic force otherwise exerted on the head and neck, a matter that is especially important in the case of children. The Bradford machine makes the possibility of reduction more certain and more rapid, and the manipulation more definite and, when properly used, less traumatic. Of the cases reported, 29.3 per cent. were reduced manually, and in 69.5 per cent. Dr. Bradford's congenital hip machine was used.

Joint trauma is minimized by its use, but it may be increased if the hip is reduced carelessly without regard to injury to bony structures. It is of especial value in difficult cases which cannot be readily reduced by hand, and in completing the stretch on the capsule after reduction.

Reduction is followed by from eight to ten months in plaster of Paris. The hip is abducted until the knee is in or back of a plane connecting the anterior superior iliac spines. The knee is flexed at 90 degrees and the hip is put up either in a neutral position as to rotation or outwardly rotated slightly or up to 90 degrees, or inwardly rotated, whichever seems most stable when the operation is completed.

As to what is called the Lange position with the hip in a neutral position as to rotation, or the Lorenz position with the hip rotated outward (the "frog position"), the surgeon has selected the one best suited for the stability of the individual case. There is no preference unless it is that, with the Lange position, the hip is not outwardly rotated. The statistics showed that there was no preference as to the Lange or Lorenz position, as far as the ultimate result was concerned.

### AFTER-TREATMENT

In the after-care, much attention should be paid to the improvement of the tone of the muscles and to the mobilization of the knee and hip while the hip is still being held in position in plaster.

It is considered an advantage to remove the plaster from the knee, lower leg and foot at the end of from six to eight weeks, and allow the patient to exercise the foot and knee. Besides this, the plaster is usually split so that the front half, or the posterior half, may be removed for short periods each day, after four weeks, for bathing or attention to the skin, and after the eighth or tenth week to permit exercise of the hip in any direction except adduction. In addition to these exercises, as the hip grows stronger (determined by palpation and by testing the strength of the hip and knee), the child is allowed to crawl on the floor with the pelvis and hip held in the plaster. Later (at the fifth to the seventh month) the plaster is removed several times daily for crawling exercises and massage, if desired, without the plaster; but the plaster is reapplied when the exercise is over. The plaster is omitted at the end of from ten to twelve months. In cases which have been unstable or have slipped out after reduction, the early attempts at preventing stiffness have been delayed.

### CHOICE OF METHOD

While statistics show that a machine operation is a little more likely to require reoperation, against this fact must be set the fact that the machine is used primarily for the difficult cases. The method cannot well be contrasted in the hospital, as nearly always the difficult cases were tried by machine and the easy cases reduced manually. As recourse to the machine is usually on account of the difficulty of the case or failure of manual reduction, the percentage of failures must necessarily be higher among difficult cases.

Fig. 2.—Single dislocation: no acetabular shelf

The manual method was rarely used after the sixth year. Undoubtedly the manual method should be tried first in all small children.

Reoperation is less frequently required up to 7 or 8 years of age, and is most often necessary between 5 and 10. After the seventh year, the chances for anatomic and physiologic perfection of results decrease.

STUDY OF THE ROENTGENCGRAMS OF THE HIP JOINT IN NORMAL CHILDREN

It is well to note some features of the roentgenologic examination taken in normal hips (all from medical, not surgical, cases) at various ages, for succeeding years, showing the development of each bone and the changes in the ileum, acetabulum, the epiphysis, the

Fig. 3.—Right dislocation: Both hips, the oblique line of the acetabular shelf, the capital epiphysis and the neck on each side should be noticed.

articulating head, the neck itself and its angle and torsion; points which will be considered in connection with reduced hips.

In normal hips, the acetabulum is made up of a pubic and an ischiatic portion, which develop one faster than the other. In 90 per cent. of all cases previous to the second birthday, the iliopubic and ischiopubic portions were as 1:1. After the second birthday, 75 per cent. of all cases showed a relation of 2:3, so that the acetabulum develops chiefly from the ischiopubic portion, especially after the child begins to stand and walk.

In 11 per cent. of the normal cases, the upper rim of the acetabulum was very oblique, in 56 per cent. oblique, and in 33 per cent. slightly oblique. Between 1 and 2 years of age, 26 per cent. were oblique. Beyond the second year, not one oblique acetabulum was noted. The oblique shelf is probably not abnormal before the child begins to walk. The shelf overlying the head gives, in normal children, an average of 90 per cent. effective head. It must be remembered that, in very small children, much of the cartilage that has not yet turned to bone does not show in the roentgenogram.

With reference to the capital epiphysis of the femur, in the normal roentgenograms ossification occurred only once previous to the sixth month. The capital epiphysis and the neck form together the ultimate articulating head. Their relative proportion varies at different ages. Considering the cases from 6 months to 3 years, 50 per cent. were two parts capital epiphysis and one part neck, while 33 per cent. were 3:1, and 16 per cent. were 1:1. Beyond the fourth birthday, the articulating head is composed, as a rule, of four parts capital epiphysis to one part neck. The capital epiphysis develops very much faster than the neck in forming the ultimate articulating head of the femur.

In a study of the capital epiphysis (that part above the epiphyseal line), the normal ultimate head broadens and is formed from the capital epiphysis and the neck, the capital epiphysis portion increasing twice as fast as the portion formed from the neck. No erosion or segmentation of the head was noted in the roentgenograms examined.

The angle of the neck at birth according to Dwight[1] is about 160 degrees, and decreases toward puberty to 125 degrees.

Torsion varies widely. Soutter and Bradford,[2] in a large series of normal hips, report 50 degrees of antetorsion to 0 degrees, with an average of 14.3. They quote Mikulicz with a series of + 37 to + 25 and an average of + 11.6, and Broca with 38 to — 2, but no average.

The femoral neck up to the second birthday is short. With growth it gradually becomes longer and more slender, and there is a definite decrease in both angle and torsion. As a rule, the shorter the neck the broader it is. (This was noted in the normal and dislocated hip as well.)

A summary of the conclusions of the hips in normal children shows that the acetabular shelf is originally slightly oblique upward and outward, but grows horizontal at the age of weight-bearing. The capital epiphysis appears about the sixth month as a small, round body which is separated from the neck by a nearly horizontal line, and no segmentation or erosion of the epiphysis is observable.

The articulating surface of the head is usually made up of two portions from the femoral epiphysis and one portion from the neck.

Fig. 4.—Result five years later in case illustrated in Figure 3: excellent function as to both motion and function.

The effectiveness of the acetabular shelf varies, 90 per cent. being about normal.

In a child, the femoral neck is broader and shorter, with a higher degree of torsion and angulation than appears in adults.

1. Dwight, quoted in Piersol's Anatomy.
2. Soutter and Bradford: Twist in Normal and Congenital Dislocation of the Femur, New York M. J., Dec. 5, 1903.

The articulating surface of the head appears to be more largely made up from the capital epiphysis and a little from the neck.

The foregoing conclusions are deductions made from a study of the statistical tables, in which all the minute detail of the bones forming the joint as seen in the roentgenogram were carefully tabulated.

Fig 5.—Right dislocation: excellent result as to both motion and function; the shallow and oblique acetabulum, the tapering capital epiphysis, the breadth and angle of the neck show the possibility of good function when the roentgen-ray findings are not normal.

## ROENTGEN-RAY STUDY OF THE DEVELOPMENT OF BONES FORMING THE HIP JOINT IN CONGENITAL DISLOCATION OF THE HIP

After the study of the development of the hip in normal children, the development of the bones making up the joint in congenital dislocation of the hip was studied before, after, and successively after operation in children of all ages. Many interesting statistics were developed from the various tables. The deductions are not impressions, but the result of a statistical study, and are more easily read than the tables. A summary of the tables is made below.

The difficult cases are classed separately from the easier manual cases. This enables us to contrast the skeletal conditions in those that were simple as compared to those that were difficult or unsuccessful.

*Acetabular Shelf.*—The acetabular shelf (the part overlying the head of the femur) may be horizontal or oblique, and is classified as follows: The acetabular shelf is called normal when horizontal; when oblique, it is called good, up to 30 degrees; fair, when from 30 to 60 degrees of obliquity exists, and poor when over 60 degrees. In a few cases it was vertical. This condition cannot always be judged in small children, in whom the whole shelf does not appear in the roentgenogram.

In endeavoring to form some conclusion of the ultimate results from the preoperative roentgenogram, the acetabular shelf is of some help. No hips with originally a horizontal shelf or a good or a fair oblique shelf dislocated after the first operation.

Ten per cent. of the hips with a poor shelf were rated later as being out. Ten per cent. of those with no shelf were rated as being out. In those cases requiring more than one operation, 20 per cent. of the hips with poor oblique shelves later dislocated.

*Head of the Femur.*—This may lie well under the acetabular shelf or it may be scarcely covered. This is a very important factor in congenital dislocation of the hip. The effective head is that portion lying under the acetabular shelf. When the shelf just covered the head, it was called 100 per cent. effective; when the head is half covered it is called 50 per cent. effective, and so on. Among the cases of congenital dislocation of the hip, two cases showed a head that was 150 per cent. effective, and three showed a head that was 125 per cent. effective. All of the patients (10 per cent.) that showed an overextended shelf were under 26 months old. In other words, the head was very small. Twenty-seven cases showed a head that was 100 per cent. effective. All of these patients were under the seventh birthday; 66 per cent. of these were under the fourth birthday; 44 per cent. of all cases showed a head that was 90 per cent. effective, and thirty-one showed a head that was 100 per cent. effective.

The effective heads (that portion under the acetabular shelf), excluding the few exceptional ones of more than 100 per cent., varied from 40 to 100 per cent. effective, with an average of 80 per cent., which is a little less than the normal average of 90 per cent.; but as most of the hip heads in congenital dislocation have broadened after operation, there is relatively as much head under the acetabular shelf. The effective head was found later to bear no relation to the type of operation.

The outline of the femoral head varies extremely, but there are certain types of head, as shown in the accompanying roentgenograms: circular (Fig. 3); semilunar (Fig. 11, right); beak shaped (Fig. 5, right); normal (Fig. 5, left); slipped (Fig. 2). These types occur as follows: circular, 36.8 per cent.; semilunar, 18.5; beak shaped, 19.5; irregular, 3.3; normal, 3.9; not determined, 18. In other words, the normal head occurred in a little less than 4 per cent. of the cases requiring more than one operation. The epiphyseal line was normal in 12 per cent., horizontal but not normal in 21 per cent., oblique in 2.5 per cent., curved in 43.5 per cent., and questionable in 21 per cent. of the cases. The type of head in the preoperative roentgenogram does not help us in foretelling the probable result.

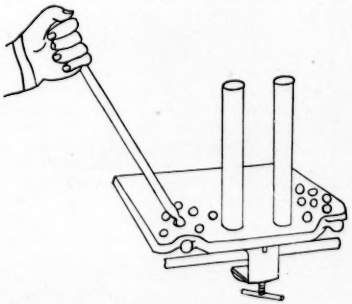


Fig. 6.—Bradford apparatus with lever: The holes in the steel plate are for the lever.

*Erosion or Segmentation of the Head.*—This did not occur in patients operated on only once. In cases which required more than one operation, it did not occur in 56 per cent. It was marked in 20 per cent. and question-

able in 24 per cent. after operation. Multiplicity of operations favors some changes in the head. In cases in which reoperation was performed, those done manually showed erosion or segmentation in 33 per cent., while those in which operation was done by Dr. Bradford's machine for congenital dislocation of the hip showed a change of 7 per cent. of the cases in which operation was performed.

*Breadth of the Neck.*—In successful cases requiring but one operation, the breadth of the neck was within normal limits in 40.5 per cent.; increased in 42.5 per cent.; diminished in 15 per cent., and questionable in 2 per cent. In those cases requiring more than one operation, the width was normal in 22 per cent.; increased in 14 per cent.; decreased in 40.5 per cent., and questionable in 23.5 per cent. Decreased width of the neck occurs in unstable hips as 2:1.

As the normal neck increased in length with age, an increased length may be rated as a good tendency. In the roentgenogram after operation, a femoral neck of normal or supernormal length was found in 42.5 per cent. of the successful cases, so that we cannot feel that we can speak positively of this as a prognostic sign.

The angle of the neck was estimated in all the congenitally dislocated hips. It was rated normal, — and +.

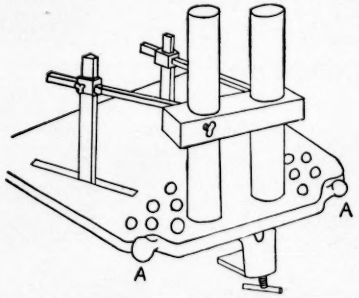



Fig. 7.—Bradford apparatus with pelvic clamps applied: The steel knobs at *A* are for the application of traction rods.

Normal was approximately 125 degrees, + 1 when approximately 140 degrees, + 2 when approximately 150 degrees, + 3 when approximately 160 degrees, and + 4 when almost in the line of the femoral shaft. One hip, three months old, had a 4 + angle; of the others a 3 + occurred in 22.8 per cent., a 2 + in 41.6 per cent., and a 1 + in 17.6 per cent.; 15.6 per cent. were rated as normal. One hip was rated as minus.

*Torsion.*—This, as noted in the roentgenogram, is extremely difficult to estimate, and in some cases impossible, so that many roentgenograms were not considered. In those in which it was possible to form any degree of estimate, it was rated as + 1, + 2, + 3, etc. A rating in degrees cannot well be made from the roentgenogram. Even by this comparative method, certain deductions could be made as to the effect of torsion. The hip appeared without torsion in 30.5 per cent.; torsion was classed as + 1 in 30.5 per cent.; as + 2 in 25 per cent., and as questionable in 14 per cent., while in difficult cases requiring machine reduction there was no torsion in 33 per cent., and it was rated as + 1 in 11 per cent., + 2 in 41 per cent. and as + 3 in 15 per cent. In cases not stable after the first operation, the neck was normal with respect to torsion in 13.5 per cent., and was rated as + 1 in 15.5 per cent., as + 2 in 37.5 per cent., as + 3 in 31 per cent., and questionable in 2.5 per cent. In other words, 73 5 per cent. of the difficult cases had been classed as 2 + or more with reference to torsion. Torsion of the neck, therefore, means in prognosis that the hip is apt to be less stable after reduction. In our series of

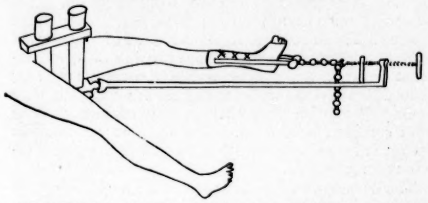


Fig. 8.—Method of applying traction rods, which may be moved for traction in any direction.

roentgenograms of hips, in normal children, of those taken previous to the third birthday only three showed no torsion. Torsion seems to disappear with use, and more rapidly after the second year of weight-bearing. In our experience, clinically, those cases of congenital dislocation of the hip in which there is extreme torsion have improved very markedly after two or three years of weight-bearing.

Torsion as shown in the preoperative roentgenogram was as follows: Only 3.6 per cent. of the normal necks as to torsion were later classed as being out, while of those with 1 +, 9 per cent. were later classed as being out; of those with 2 +, 15 per cent. were later classed as being out; of those with 3 +, 40 per cent. were later classed as being out, while lengthened and normal necks in the preoperative roentgenogram form 42.5 per cent. of the successful cases.

A laterally concave bowing of the femur in its upper third was noted in certain cases usually associated with marked torsion, and frequently in cases with increased angle of the neck. It was present in 19.2 per cent. of the dislocated femora.

Weight-bearing has the following effects: The pelvis becomes broader, the crests flare more, and the acetabulum shows an increase of the ischiopubic portion over

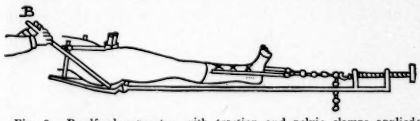



Fig. 9.—Bradford apparatus with traction and pelvic clamps applied: The lever *B* may be shifted to any position and used at any angle.

the iliac portion. The outline of the acetabular shelf becomes clearer and the obliquity of the shelf gradually decreases. The shelf is improved and becomes more horizontal and covers the head, making it about 90 per cent. effective. The capital epiphysis broadens on a horizontal epiphyseal line without apparent segmentations, the neck lengthens, its angle decreases, and the torsion decreases.

*Redislocation.*—The following factors predispose to redislocation: imperfect operative reduction, imperfect after-care, and a poor shelf. A good or fair shelf by

preoperative roentgenograms was in no instance later classed as dislocated. When there is anatomic malformation of the bones forming the hip joint, the condition is improved by reduction; but anatomic perfection is not likely to be obtained.

PROGNOSIS

At this juncture it may be of interest to see what can be told from the preoperative roentgenogram. The statistical table shows certain facts, some of definite interest. As to torsion, in 20 per cent. of those rated as 2 +, and 29 per cent. of those rated as 3 +, reoperation was done. In other words, the cases requiring reoperation and the cases later classed as being out were among those with poor shelves, thin necks and those with considerable torsion. The shelf, as an ultimate factor, is more important than torsion in the preoperative roentgenogram.

The development of the bone after operation is noteworthy. The acetabular shelf improves its rating in about 60 per cent. of cases. Twenty-five per cent. of those cases show no shelf improvement after an operation; in 15 per cent., the shelf becomes less effective after operation. This is especially so in the difficult cases requiring machine operation. While an oblique shelf and torsion predict some difficulty, the chance of improvement of these two conditions after operation from weight-bearing adds an encouraging factor. This is especially so if the hip seems stable after reduction and if at the time of operation one feels a distinct click as it is slipped in and out of the acetabulum. A hip that will slip out at the time of operation without a noticeable dull or sharp click is either imperfectly reduced or will probably require future operation.

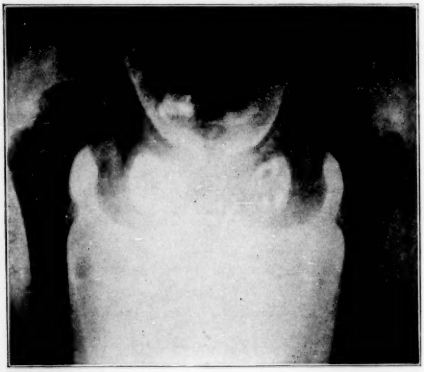


Fig. 10.—Double dislocation: excellent result as to both motion and function.

The Trendelenburg sign is often present in other conditions than dislocation when the muscles are weak with the head in the acetabulum, and it may be absent when the hip is out. For this reason too much stress should not be placed on this sign in making a decision as to dislocation, but it is a valuable sign in confirming such diagnosis. The roentgenogram, and the position of the hip with reference to Nélaton's line, together with the physical examination, are more important.

COMPLICATIONS AND ACCIDENTS

*Postoperative Stiffness.*—This condition resulted occasionally from the prolonged fixation of the joint in a position of extreme abduction. This stiffness existed in most cases temporarily when a plaster had been on continuously for months, but was regarded in difficult cases as a safeguard against redislocation, as it maintained a position of safety. As a rule, it wore away without treatment. It can be prevented by early motion, but the long continuance of the plaster has in general proved safer. If it persisted too long, it was as a rule easily disposed of by manipulation under ether and preferably retention in the corrected position temporarily. This was done twenty times in the series. The cases which required such manipulation occurred when the reduction had been difficult, 95 per cent. being machine reductions.

Fig. 11.—Double dislocation: excellent result as to both function and motion.

*Unsuccessful Operations.*—There were four unsuccessful attempts at reduction:

1. When the child was 2½ years old, the dislocation could not be reduced manually, and two unsuccessful machine attempts were made after the child was 6 years old.
2. Two unsuccessful attempts at manual reduction were made in children aged 4¾ years and 5¾ years.
3. An unsuccessful attempt was made by machine in a child, aged 6½ years. Both trochanters were very high in the roentgenogram.
4. In children aged 9 years, there were three operations by hand and by machine on the right side and two on the left.

The roentgenograms in these cases were investigated to see whether in the conformation of the bones any explanation was to be found. The conditions were as follows: Open operations: Five open operations were performed in difficult cases in which operations had been performed several times without success. Both the manual and the machine methods were used.

One patient had an hour-glass constriction too tough to tear, found with the head in the sciatic notch when it redislocated, and later classed as being out.

One was ankylosed in a fair position for use.

In two there was restricted motion in a good position.

One case was reported above as unsuccessful, and was later classed as being out.

*Fractures of the Femur.*—These occurred three times during reduction.

The danger of fracture may be minimized by not operating on a child who has been long in bed or who is just taken out of plaster worn for some time after a previous unsuccessful attempt at reduction.

There were two cases of peroneal paralysis, on one side, one severe with trophic skin slough, which required skin grafting of the outer toes with complete recovery; another, a partial paralysis from which the patient recovered completely in three months. There were, then, two cases of paralysis in 355 operations. Paralysis has been rare in this series. We believe that the infrequent occurrence of paralysis in this series is accounted for by the fact that the use of the machine in difficult reduction has diminished the trauma to the structures about the joint, and that under modern conditions it should rarely occur.

Bade [3] reports, as to the occurrence of paralysis in thirteen European clinics, that paralysis occurred sixty-three times in 3,176 cases; sciatic paralysis occurred sixty-one times; peroneal paralysis sixteen times, and total paralysis eleven times. There were no recorded cases of crural paralysis. Some clinics had 9 per cent. of paralysis; the average percentage of paralysis was 2 per cent. in all these clinics combined.

After operative reduction, the retention of the hip in place seems largely dependent on: thoroughness of the original reduction; stretching of the capsule after reduction; care in following out the after-treatment; bony formation; muscular and ligamentous development and structure; accidents; activity of the patient and muscle tone, and a consideration of whether the case is double or single. In the former, the congenital mal-

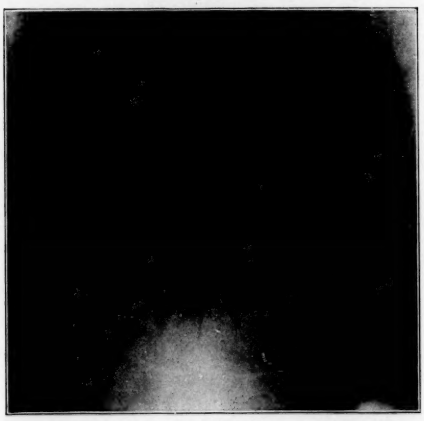


Fig. 12.—Left dislocation: excellent results as to both function and motion.

formation, being more extensive, seems to redispose to redislocation.

SUMMARY

In 355 operations, there were eleven failures at the time of operation because of inability to reduce the dislocation after a sufficient amount of time and force had been expended; 35 per cent. of all hips required or should have had a secondary reduction.

3. Bade, P.: Ztschr. f. orthop. Chir. **24**: 198, 1909.

In the statistical study as to the machine versus the manual method, it is difficult to make deductions, as the former is resorted to for the difficult cases. As to the effect of reduction on the head of the femur in cases in which reoperation was required, there was erosion or segmentation of the head in 33 per cent. of the manual as compared with 7 per cent. of change in cases of reoperation in which the machine was used.

Fig. 13.—Right dislocation: excellent result as to both function and motion.

After the seventh year, the machine offers the best means of obtaining a permanent reduction.

With adequate operation and after-care, from 80 to 90 per cent. of all hips seen before the seventh year ought to be permanently reduced with good function.

There was 71 per cent. of success if all cases are counted and the forty-two unknown ones counted as failures (which was not the case); but of the cases personally examined in which the result was known, the percentage of success was 83.8.

**The Treatment of Carbuncle with Cautery.**—J. D. Singley (*Pittsburgh M. Bull.*, Sept. 1, 1923) advocates the incision of carbuncles with the actual cautery. The skin is disinfected as usual. Under nitrous oxid anesthesia, and with a "heavy duty" cautery heated to a very dull red or "black only," the entire carbuncle is encircled, the tissues being burned to a depth sufficient to eradicate the disease. Considerable pressure on the cautery is necessary, and advance is made slowly. When the mass of suppurating tissue is thus removed, any cavities that may lead into the crater from adjacent tissue are thoroughly cauterized also. The result is a dry crater with a black eschar, over which is applied a large moist boric acid dressing, which is renewed daily until the eschar has separated. A stimulating application is then used, such as equal parts of balsam of Peru and castor oil. The patients feel relieved of pain immediately after the operation, and the cicatrix is comparatively small. The author compiled thirty-eight cases, nineteen of which were treated by excision by cautery with two deaths, one the following day, due to meningitis, the other ten days after operation, due to apoplexy. Singley does not claim priority in excising carbuncles, as J. Collins Warren of Harvard practiced excision with the knife, and others have done so followed by the use of the cautery. He contends that the safest and most efficient method of treating carbuncle is to remove it *en masse* with the actual cautery.

# PITYRIASIS ROSEA

## WITH PARTICULAR REFERENCE TO ITS UNUSUAL MANIFESTATIONS

JOSEPH V. KLAUDER, M.D.
PHILADELPHIA

Pityriasis rosea is not the restricted disease that it is commonly depicted to be in most textbooks on dermatology.

Fig. 1.—Primitive patch of pityriasis rosea on the face, and a well pronounced eruption on the neck.

Gibert's [1] brief description of pityriasis rosea in 1860 remains an accurate description of only one form of the disease,[2] the macular variety. He did not recognize the circinate variety. In 1862, Bazin [3] directed attention to this common variety of the disease. Gibert considered his pityriasis rosea an intermediate variety between pityriasis simplex and pityriasis rubra.

The eruption described by Vidal [4] in 1882 as pityriasis circiné et marginé is generally accepted now to be an anomalous variety of pityriasis rosea. Vidal regarded his pityriasis circiné et marginé as distinct from pityriasis rosea, and enumerated its differential features from that disease. The notable differential feature was the long duration, about six months. In the light of present knowledge, that feature cannot be regarded as negativing the diagnosis of pityriasis rosea.

Subsequent clinical observations disclosed other varieties of the disease, namely, a papular variety and pityriasis rosea with vesication. A classification embracing the unusual and the anomalous varieties of the disease might be suggested in the accompanying tabulation.

- Macular
  - Punctate
  - Guttate
  - Nummular
  - Circinate
  - Bilateral
  - Unilateral
  - Generalized
  - Localized
  - Confluent and Diffuse
    - Pityriasis rosea gigantea (Darier)
    - Pityriasis circiné et marginé (Vidal)
- Urticarial
  - Pityriasis rosea urticata (Vorner)
  - Urtiée pityriasis rosea (Hallopeau)
- Papular
  - Maculopapular
  - Follicular
  - Miliary
    - Large
    - Small
- Vesicular—Pityriasis rosea with vesication.

### THE PRIMITIVE PATCH

The clinical features of the primitive patch are well known and need not here be described. It is not my purpose here to present frequently quoted statistics as to its incidence and its location. It may be single or multiple, and appear on any part of the body, excepting perhaps the hands and the feet. The occurrence of the primitive patch at these sites I have been unable to find recorded in the literature.

It is interesting to note that in one of Hallopeau's patients the primitive patch preceded by two months the appearance of pityriasis rosea on the trunk.

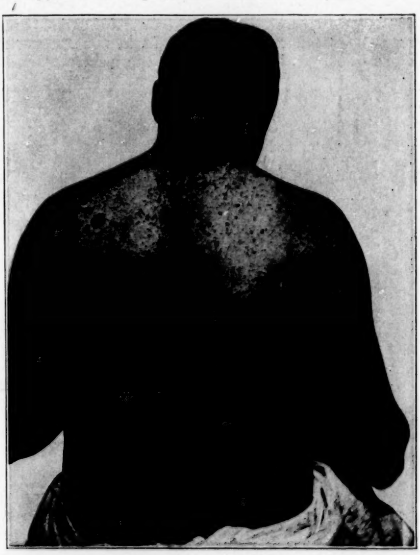


Fig. 2.—The commoner lesions of pityriasis rosea: punctate, guttate and nummular macules; the primitive patch is seen on the right arm.

In the case reported by Allen,[5] it was of gigantic size, occupying half the chest wall. Its occurrence on the face has been recorded by Little,[6] Pringle [7] and

1. Gilbert: Traité pratique des maladies de la peau et de la syphilis, Paris, 1860, p. 402.
2. The eruption described by Willan in 1798 as roseola annulata, by Rayer in 1828 as erythema annulatum, and by Wilson in 1857 as lichen annulatus serpiginosus were in all probability cases of pityriasis rosea. Herpes tonsurans maculosus, described by Hebra in 1876 as a trichophytosis, is now considered to have been pityriasis rosea.
3. Bazin: Les affections génériques de la peau, Paris, 1862, p. 331.
4. Vidal, E.: Le pityriasis circiné et marginé: Description de son mycoderme, le microsporon anomeon (Microsporon dispar), Ann. de Dermat. et de Syph. **3**: 22-28, 1882.
5. Allen: Discussion, New York Dermatological Society, J. Cutan. Dis. **14**: 356, 1896.
6. Little, E. E.: Case of Pityriasis Rosea with Some Unusual Characteristics, Brit. J. Dermat. **26**: 358, 1914.
7. Pringle, J. J.: Brit. J. Dermat. **26**: 359, 1914.

Moingeard.[8] The latter observed three primitive patches on the face of the same patient. Reference may be made here to Figure 1, which shows the primitive patch on the face. Its presence on the glans penis has been recorded by Pringle.[7]

### MACULAR VARIETIES OF PITYRIASIS ROSEA

The punctate, guttate, nummular (Fig. 2), circinate and maculocircinate (Fig. 6) forms are the common-

Fig. 3.—An unusual instance of pityriasis rosea involving the face and neck.

est manifestations of the disease. Their clinical appearance is well known and need not be discussed.[8a]

In the majority of cases, the greater part of the eruption involes the trunk, is sparse on the extremities, and does not involve the face, neck, hands and legs. However, cases of an atypical distribution of the eruption are not especially rare.

*Involvement of the Face and Neck.*—Notwithstanding statements in some textbooks that the eruption "rarely, if ever," or "almost never" appears on the face, neck and hands, and "never" below the knees, there are a number of recorded instances of such involvement. In my observations, pityriasis rosea appearing on the neck is not rare; it is, however, more rare on the face.

In Little's [9] case, the eruption began on the face, and Moingeard,[8] Photinos [10] and Towle [11] report cases in which the eruption was limited to the face and neck. Mention may here be made of a case observed in which the eruption remained limited to the arms and neck. Indeed, in Towle's 202 cases of pityriasis rosea, there was an involvement of the face and neck in eight, an incidence of about 4 per cent. Adamson [12] pictorially reports a case, in which there was an involvement of the face and neck. Another such instance reported by Adamson [13] deserves particular mention. The eruption was profuse on the face and neck, with swelling, redness and crusting, the eruption resembling an acute dermatitis of external origin.

Figure 1 shows a patient from the clinic of Dr. J. F. Schamberg, not only with the primitive patch on the face, but also with a well pronounced eruption on the neck.

The patient shown in Figure 3 presented a profuse eruption of pityriasis rosea on the face and neck.

### GENERALIZED PITYRIASIS ROSEA

*Involvement of the Hands and Feet.*—Pityriasis rosea appearing on the hands and feet is less frequently seen than an involvement of the face and neck. A number of instances have been reported in which the eruption was generalized, extending beyond the usual areas of distribution. In the majority of these cases, the hands and feet were spared. Indeed, in one of the original cases of pityriasis rosea described in this country by Duhring,[14] the eruption was generalized. In Stowers'[15] patient, who presented a generalized eruption, the face, hands and feet were involved, and the feet were also involved in Moingeard's [8] patient, with a generalized eruption.

The patient shown by Little [6] before the Dermatological Section of the Royal Academy of Medicine presented some remarkable features of pityriasis rosea.

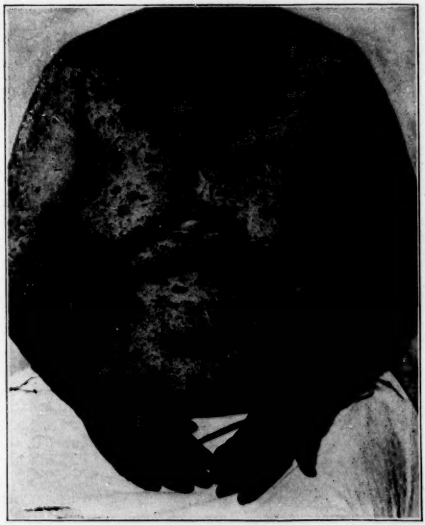


Fig. 4.—An unusual case of pityriasis rosea: The eruption was generalized, sparing only the scalp, face and soles.

The primitive patch appeared on the face, which was much involved with the eruption. There were numerous typical patches of pityriasis rosea on the dorsum of the hands and feet. A number of vesicles, the size of

8. Moingeard, A.: Etude sur le pityriasis rosea de Gibert, Thèse de Paris, No. 329, 1889.
8a. Such a discussion is given by Klauder, J. V.: Pityriasis Rosea, a Clinical Study, Internat. Clin. **2**, Series 33.
9. Little, E. E.: Discussion on Pityriasis Rosea, Brit. J. Dermat. **26**: 329, 1914.
10. Photinos: Berlin Dermatological Society, Case Presentation, Monatsh. f. prak. Dermat. **42**: 547, 1906.
11. Towle, H. P.: Pityriasis Rosea, J. Cutan. Dis. **22**: 177-182, 1904.
12. Adamson, H. G.: Pityriasis Rosea, in Allbutt and Rolleston's System of Medicine **9**: 398.
13. Adamson, H. G.: Brit. J. Dermat. **30**: 40, 1918.
14. Duhring, L.: Pityriasis Maculata and Circinata, Am. J. M. Sc., 1880, p. 359.
15. Stowers, quoted from Little (Footnote 9).

a large pea, were present on the upper and inner border of the instep and on the soles of both feet, which were interspersed with typical rose-pink, slightly scaly patches of pityriasis rosea.

Another remarkable case is reported by Colcott Fox.[16] The patient presented a generalized eruption of pityriasis rosea extending to the finger and toe tips.

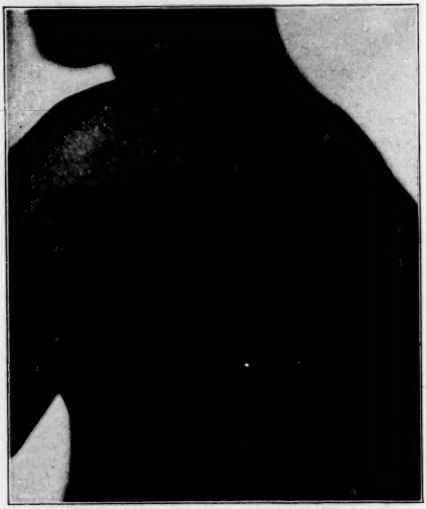


Fig. 5.—Papular eruption of pityriasis rosea: The lesions were composed of small, miliary papules, which were confluent and scaly.

The eruption was of the maculopapular type. The papules were of the large miliary type. On the palms and soles the eruption was copious, and about the fingers and toes were large, clear vesicles.

Figure 4 shows a patient from the clinic of Dr. J. F. Schamberg, who presented a generalized and profuse eruption of pityriasis rosea which spared only the scalp, face and soles. The lesions were macular and maculocircinate, and were typically those of pityriasis rosea. The eruption was as profuse on the extremities as on the trunk. The dorsums of the hands were involved; the palms were erythematous and scaly. The eruption was confluent on the upper chest, producing a large area of erythrodermia, which presented, as did the palms, an eczematous appearance.

A case of generalized pityriasis rosea is shown in Figures 5 and 6, which are photographs of the same patient. The eruption on the trunk (Fig. 5) was profuse and papular in character. Both lower extremities, down to the ankles, were involved with the commoner maculocircinate lesions (Fig. 6).

*Involvement of the Scalp, Eyelids and Penis.*—The scalp, the eyelids and, indeed, the penis may in rare cases be the site of pityriasis rosea. An involvement of the scalp has been recorded, Kumer[17] recently reporting three such cases. Szaboky[18] saw the eruption on the eyelids, and Little[6] and Howard Fox,[19] on the penis.

UNILATERAL AND LOCALIZED PITYRIASIS ROSEA

Unilateral and localized eruptions of pityriasis rosea have been reported. In Szaboky's[18] case there was a unilateral eruption on the left side of the body, and Moingeard[8] reports another case of unilateral pityriasis. In Little's[9] patient the disease was confined to the right hip, right buttock and right thigh. The same writer also mentions a case in which the eruption was confined to the thighs. The patient whose condition is shown in Figure 7 presented typical lesions of pityriasis rosea confined to the anterior surfaces of both thighs and upper extremities. Other instances of localized pityriasis rosea in which the disease was limited to different parts of the body are reported by Moingeard.[8]

Thibierge,[20] writing on clinical forms of pityriasis rosea, mentions a superior cervical localization, which never extends beyond the submaxillary region, an inferior cervical, and an abdominolumbar localization, and finally a form localized to the extremities, such as is shown in Figure 7.

George Henry Fox[21] describes localized pityriasis rosea of the axilla and groin which, at one time in the course of its involution, markedly resembled dermatitis seborrhoeica. Figure 8 shows a localized pityriasis rosea which was confined to both axillae and the neck.

Fig. 6.—An unusual instance of pityriasis rosea extending below the knees: The lesions were of the common maculocircinate type; same patient as in Figure 5.

*Pityriasis Circiné et Marginé of Vidal.*—The eruption described by Vidal[4] as pityriasis circiné et marginé

16. Fox, Colcott: Pityriasis Rosea with Vesication, Brit. J. Dermat. **18**: 281, 1906.
17. Kumer, L.: Ueber Pityriasis rosea der behaarten Kopflant, Dermat. Ztschr. **31**: 28-32, 1920.
18. Szaboky, J.: Beitrage zur Actiologie der Pityriasis rosea, Monatsh. f. prak. Dermat. **42**: 495-502, 1906.
19. Fox, Howard: J. Cutan. Dis. **36**: 120, 1918.
20. Thibierge, G.: Pityriasis rosé, La pratique dermatologique **3**: 894-905.
21. Fox, G. H.: A Broader View of Pityriasis Rosea, J. A. M. A. **59**: 493 (Aug. 17) 1912.

begins, according to Vidal, as small, scaly macules commonly occurring on the trunk and at times on the arms, in the axilla and groin. The eruption is asymmetrical and is of slow involution, pursuing a course of several months. The lesions after about one month attain the size of a franc, at times much larger, and may become circinate. In certain regions, as the axilla and groin, the lesions may become confluent and form marginated patches. When the affection has existed several months in the axilla and groin, it may, according to Vidal, provoke an intertrigo or even an eczema, a form of Hebra's eczema marginatum.

In addition to the aforementioned feature, which Vidal gives as differentiating the eruption from pityriasis rosea of Gibert, Vidal states, is the finding of *Microsporon anomeon,* which he regarded as the etiologic factor.

It is generally conceded now that the eruption described by Vidal is an anomalous variety of pityriasis

Fig. 7.—Pityriasis rosea confined to the anterior surfaces of the thighs and upper extremities.

rosea of Gibert and not due, as Vidal asserted, to *Microsporon anomeon.*

The localized eruptions of pityriasis rosea of which Thibierge writes, as well as those described by Moingeard, George Henry Fox and others, can doubtless be placed in the same category as Vidal's pityriasis circiné et marginé, which probably represents a localized and diffuse form of pityriasis rosea, which may become confluent with a marginated border, or form confluent circinate patches with gyrated borders and which presents a figured appearance. In some cases the resemblance to dermatitis seborrhoeica is marked. These eruptions have a predilection for the axilla and groin, are infrequently seen, and are rarely mentioned in textbook descriptions of pityriasis rosea. The duration of these localized eruptions of pityriasis may be as long as several months. The eruption shown in Figure 8 persisted three months.

Figure 9 shows a localized pityriasis rosea with confluent circinate patches, the borders of which were

Fig. 8.—An unusual instance of a localized eruption of pityriasis rosea: The corresponding area on the left side was similarly involved, as was also the neck; no other regions were involved; the lesions, typical of pityriasis rosea, involuted in about three months.

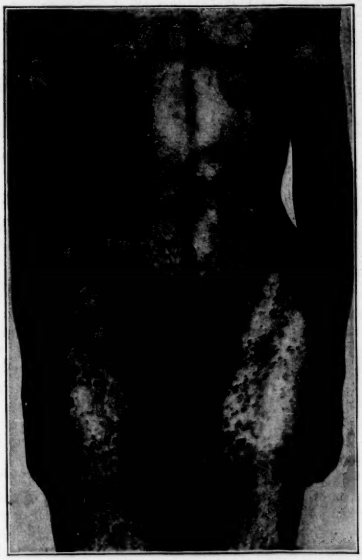


Fig. 9.—A localized pityriasis rosea composed of confluent circinate patches, the borders of which were gyrated; the eruption presented a figured appearance and is of the type of Vidal's pityriasis circiné et marginé.

gyrated. The eruption presented a figured appearance and is doubtless of the type of Vidal's pityriasis circiné et marginé.

*Pityriasis Rosea Gigantea (Darier).*—This anomalous and very rare type of pityriasis rosea described by Darier is characterized by enormous plaques. The character of these plaques and their course appears to be the same as the common type of the disease. In Pringle's [22] patient, the condition first appeared as a patch "the size and the shape of a pear" over the right

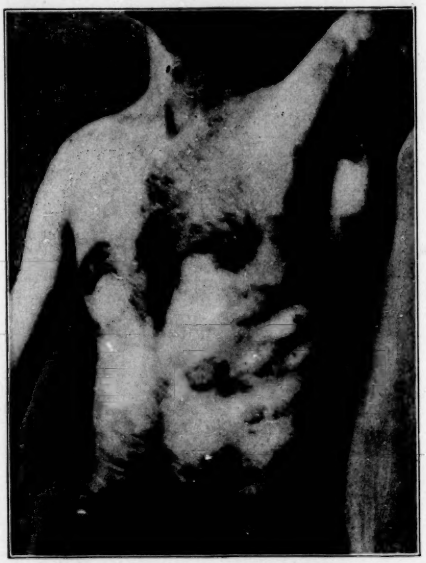


Fig. 10.—Pityriasis rosea gigantea (Darier); a rare form of pityriasis rosea characterized by plaques and circles of enormous size.

scapular region, followed in a few days by the appearance of similar patches. The eruption was symmetrically arranged over the trunk and extremities, and consisted of large circles and gyrate figures produced by their intersection. Some of the elementary circles measured from 2 to 2½ inches (5 by 6.3 cm.) in diameter. It was the consensus of those present that the eruption was pityriasis rosea gigantea of Darier.

Figure 10 shows a patient from the clinic of Dr. J. F. Schamberg, with pityriasis rosea gigantea. The eruption, symmetrically arranged over the trunk and the upper portions of the extremities, was composed of large plaques and circles, the former the size of one's palm; some of the latter had a diameter as large as 2½ inches (6.3 cm).

*Urticarial Pityriasis Rosea.*—A rare form of pityriasis rosea has been described by Vorner as pityriasis rosea urticata, and by Hallopeau as "une forme urtiée de pityriasis rosea," in which the lesions are considerably raised like an urticarial wheal and are accompanied by intense itching.

### PAPULAR TYPES OF PITYRIASIS ROSEA

In my observation, the papular types of pityriasis rosea are not especially rare; indeed, not uncommon in the negro, although textbooks on dermatology make little or no mention of this type of the disease. A notable exception are the volumes of Hartzell and of Hazen; in the latter volume papular eruptions of pityriasis rosea are pictorially presented

Pityriasis rosea may begin as a small, papular eruption. Besinier long ago pointed out that the papules are follicular.

The more common papular eruption is seen as the maculopapular type, in which a certain number of papules remain as such throughout an attack. In other less common cases the papular character of the eruption is quite pronounced. As mentioned before, this is probably more commonly seen in the negro. The papules may be follicular or miliary, and either small or large; they tend to become confluent, and are scaly from the onset.

Figure 5 shows a negro with a profuse eruption of pityriasis rosea on the trunk; the lesions were composed of confluent, miliary, scaly papules. Figure 6 represents the same patient and shows maculocircinate lesions, on the thighs, which extended down to the ankles.

Figure 11 shows a negress with a distinct and well pronounced miliary papular eruption of pityriasis rosea.

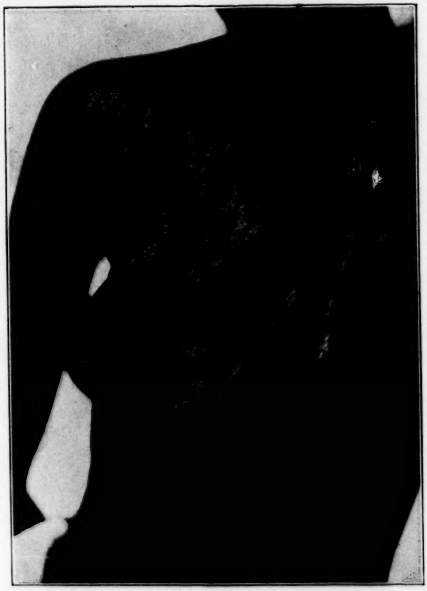


Fig. 11.—A large miliary papular eruption of pityriasis rosea.

### PITYRIASIS ROSEA WITH VESICATION

In rare instances, part of the eruption in pityriasis rosea may be vesicular. Mention has already been made of Little's patient, who presented a number of unusual features of pityriasis, one of which was the presence of numerous vesicles the size of a large pea on the upper and inner border of the instep and on the soles of both feet, which were interspersed with

22. Pringle, J. J.: Case Presentation, Section on Dermatology, Royal Society of Medicine, Brit. J. Dermat. **27**: 309, 1915.

typical scaly patches of pityriasis rosea. This admixture led Little to differentiate the vesicular eruption from an ordinary dyshidrosis, and also the fact that the distribution was unlike that of dyshidrosis.

Mention has likewise been made of Colcott Fox's case of pityriasis rosea with vesication. It has been stated by some writers that vesication is not rare in pityriasis rosea of children. This has not been so in my observations, nor, do I believe, in the experience of most dermatologists.

Wile [23] reports a case of pityriasis rosea with pseudo vesicles in which the papules appeared as though they were superimposed on apparently deep seated vesicles. When these lesions were punctured, a drop or two of clear serum was expressed by firm pressure.

In the foregoing regard it should be recalled that, in the pathologic anatomy of pityriasis rosea, studied notably by Darier, Unna and Sabouraud,[24] the latter has pointed out the uniform presence, in the border of the lesions, of microscopic foci of spongiosis and numerous superficial histologic vesicles. The occurrence of vesicles clinically is doubtless an exaggeration of these histologic vesicles.

1807 Spruce Street.

## ANTIDIPHTHERIC SERUM IN OCULAR INFECTION

### A CLINICAL AND EXPERIMENTAL STUDY OF NINETY-ONE CASES *

BEN WITT KEY, M.D.
NEW YORK

At the request of our chairman of the section that I present to you the subject of antidiphtheric serum in ocular infection, based on my own observations and research, I naturally feared that so many contributions on this subject had already been presented in the literature, if not before this section, that an additional one might not prove of any special interest.

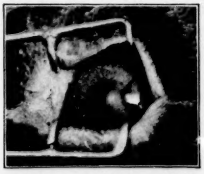


Fig. 1.—Controlled corneal abscess, end-result of Experiment 1. Deep layers of cornea were inoculated with Staphylococcus aureus.

Fig. 2 (Experiment 4).—Corneal abscess twenty-four hours after inoculation with Staphylococcus aureus, in injected rabbit.

Protein therapy has become very popular, perhaps too popular. Innumerable kinds and varieties of proteins or nonspecific agents have been employed, some empirically, others with a definite immunologic theory underlying their use, and yet most of them, whether serum, vaccine, enzyme, or chemical agent, having more or less constitutional effect on the patient.

This therapy has suffered in the opinion of the profession in previous years because it was opposed to or unexplained according to known standards of bacterial activity in the human body, and especially because its scope of usefulness led many observers to herald it, untried, as a cure for all infections, regardless of bacteriologic diagnosis. "Remarkable cures" reported by enthusiastic observers made it worse, for these results were based on truly opposing fundamental principles of pathology and bacteriology, so that wholly

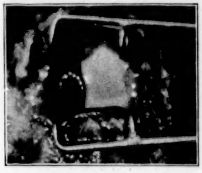


Fig. 3 (Experiment 4).—Violent infection twenty-four hours after inoculation of cornea with Staphylococcus aureus, in control rabbit.

Fig. 4 (Rabbit 1, Experiment 4). —Improved corneal abscess after injection of 4 c.c. of serum.

unreasonable results and reports and theories, claimed for it, cast doubt on its real value. On the one hand, a hopeless infection of an eye treated by every means, including protein, will yield no favorable result, although numerous beneficial effects may be noted in the process. On the other hand, in an infection, severe or mild, capable of being cured, if relief is obtained with the aid of protein, it can be claimed that the result would have been the same had no protein been employed. Only, then, otherwise unexpected favorable effects and response to injections in innumerable cases from reliable observers can be of any value in such a study as this. "Nihil est in intellectu quod non prius in sensu."

But the place of protein therapy in general medicine and in ophthalmology is becoming stronger and more appreciated each year, with the increasing reports of clinical results and more definite experimental data. So numerous are the clinical results reported to date that there no longer remains any doubt that protein stimulation and cellular activation of the organism in certain infections and inflammatory ocular reactions has a useful and important place in ophthalmology. Moreover, one notes in our books on infection and immunity and on physiologic chemistry a shifting and adjusting and analyzing of proteins, toxins, ferments, colloids and enzymes in order to account for this mass of clinical facts, which must needs be explained.

It is no longer a field of research which is entirely opposed by the now changing standards of bacterial activity, of specificity and immunity. These things have come to pass through the pressure of insistent demand on the theorist by the accumulating evidence of clinical results in human and in animal experimentation as well. Although Ehrlich's side-chain theory best explains the specificity and mode of action of various antibodies, there is a growing tendency to explain many of these reactions on a physicochemical and colloidal basis. Antigens are substances that cause antibodies in the body fluids. And without exception antigens are colloids and are usually protein in nature. Fur-

23. Wile, V. J.: Pityriasis Rosea with Pseudo Vesicles, New York M. J. **90**: 962, 1909.
24. Sabouraud, R.: Note sur l'histologie du pityriasis rosé de Gibert, Rev. prat. d. mal. cut. syph. et vén. **1**: 53-59, 1902.

* Read before the Section on Ophthalmology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.
* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

thermore, antibodies are colloid in their chemical characteristics; while they may or may not be solutions of colloids, they are, in the final analysis, products of cellular activity and therefore derived from colloidal solutions (colloid dispersions).

It is my purpose, therefore, to outline the history and theory of protein therapy in ophthalmology and to present the results of my observations and the accumulated results of others, and further, to point out the present status of the physiologic action, nonspecific reaction, of proteins and their place in the field of immunity.

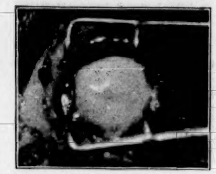


Fig. 5 (Rabbit 2, Experiment 4). —Persistence of violent infection in control rabbit inoculated with Staphylococcus aureus.

Fig. 6 (Rabbit 1, Experiment 4). —Continued improvement in injected rabbit after further injection of 4 c.c. of serum.

## OBSERVATIONS

My observations are limited to those following the injection of antidiphtheric serum, although I have employed pasteurized sterile milk in two cases. In the latter (cases of advanced hypopyon keratitis), the constitutional reaction was peculiarly violent and no noticeable effect on the ocular lesion could be traced with any degree of certainty.

On the contrary, my experience with antidiphtheric serum as a nonspecific or paraspecific agent—both from clinical observation and in experiments on rabbits—has proved conclusively to me the efficacy of the serum in combating pneumococcic and staphylococcic infections of the refractive media of the eye. This conclusion is substantiated by further evidence, in addition to my previous efforts in the study of this subject. I reported, in 1919, a series of thirty cases in detail, together with numerous observations by other experimenters.[47] Two years later I presented fourteen additional cases,[48] together with an analysis of the effects and the probable reaction. In 1922, further observations[49] on twenty-three additional cases were reported, with a brief review of the nonspecific reaction and its probable mechanism of effect.

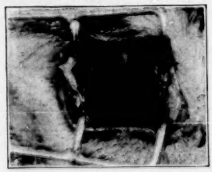


Fig. 7 (Experiment 5). — Immunized rabbit (9,600 units); 12 c.c. of serum injected over period of four days; appearance day after inoculation of anterior chamber with pneumococci.

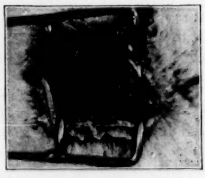


Fig. 8 (Experiment 5). — Injected rabbit (4 c.c. of serum) day after inoculation of anterior chamber with pneumococci.

Since the last review, twenty-four cases have been studied, together with a limited series of experiments on rabbits, notes on which are presented in this paper. Of the twenty-four cases, nine were hypopyon keratitis; six were infections of the anterior segment after penetration (three of these after accidental trauma, one after trephine and one after cataract extraction); two, panophthalmitis; and seven, ulcus serpens. These additional twenty-four cases, therefore, represent an experience based on observations of a total of ninety-one cases over a period of six years. Of these, forty-eight were hypopyon keratitis; eighteen were infections of the anterior segment (fourteen after accidental penetration, four postoperative); eleven, panophthalmitis; and fourteen, ulcus serpens.

It is obviously impractical and unnecessary to relate these cases even in brief detail. But it seems fitting that a summary of them, especially pertaining to those changes, reactions and results which occur with reasonable regularity, be presented in order to emphasize certain phases of this therapy which may prove interesting and worthy of your consideration.

*Hypopyon Keratitis.*—Of all the cases of hypopyon keratitis (forty-eight in number), thirty-eight were in patients over 40 years of age, and most of these were over 55. This observation has been a consistent one in each series of cases I have studied and bears out the usual history, since it is well known that hypopyon keratitis occurs commonly in the aged and often debilitated individual, frequently following on the neglect of a local injury. Moreover, it is in keeping with the two fundamental theories as to the biologic alterations which take place in the organism after injection of a nonspecific agent; namely (1) those that involve cellular stimulation, the "plasma-activation" of Weichardt,[50] and (2) those resulting from alterations in the permeability of the body cells, studied by Luithlen,[51] by Starkenstein[52] and others and which represents a diaphasic phenomenon.

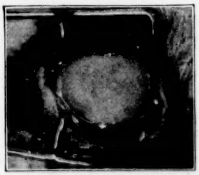


Fig. 9 (Experiment 5).—Control animal, day after inoculation of anterior chamber with pneumococci.

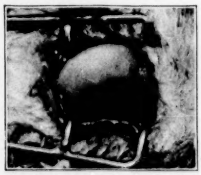


Fig. 10 (Rabbit 1, Experiment 5). — Sudden involvement, four and one-half days after serum injection, quiet up to that time (pneumococcus inoculation of anterior chamber).

In all but two of the cases of hypopyon keratitis the ulcer was located in the center or near-center of the cornea; one of these being a laceration with infection at the corneal margin, which responded at once to local treatment and serum injection. The other occurred in a case complicated by syphilis. Forty-six of these cases, therefore, had the process of ulceration

47. Key, B. W.: Tr. Am. Ophth. Soc. **15**: 365, 1919; Arch. Ophth. **48**: 581.
48. Key, B. W.: New York State J. Med. **21**: 18 (Jan.) 1921.
49. Key, B. W.: Arch. Ophth. **51**: 471 (Sept.) 1922.
50. Weichardt: Berl. klin. Wchnschr., No. 1, 1903.
51. Luithlen, F.: Ueber Albumosentherapie, Berl. klin. Wchnschr. **62**: 344, 1920; Aderlass, ein Teil der Kolloidtherapie, Wien. klin. Wchnschr. **32**: 1024, 1081, 1919.
52. Starkenstein, E.: Proteinkorpertherapie und Entzundshemmung, München med. Wchnschr. **66**: 205, 1919.

in the center or near-center of the cornea, an observation of significance, since this area is least protected by systemic resistance, being furthest from the source of nourishment (the blood). This observation is also in line with Weichardt's [50] hypothesis of marked increased cellular activity (glandular, muscular and leukocytic) and with Starkenstein's [52] diphasic changes in the permeability of the capillaries and body cells following injection of a nonspecific agent (diphtheric serum, typhoid vaccine, etc.), resulting thus in the production of nonspecific resistance to infection in a vital area (center of the cornea) and in an aged and debilitated individual.

The treatment was similar in all cases: Cauterization with phenol (carbolic acid, concentrated) followed immediately by alcohol (50 per cent.); in advanced cases, multiple incisions through the ulcerated area, followed by the phenol and alcohol cauterization. Antidiphtheric serum, from 1,000 to 5,000 units (varying with the age and weight of the patient), was injected at the earliest possible moment, this dose being repeated or modified in from twenty-four to forty-eight hours, depending on the reaction observed after the previous injection, and repeated as often as seemed advisable in the individual case. The usual local treatment of hot fomentations, atropin and an ointment containing 1 part of mercuric chlorid in 5,000

Fig. 11 (Rabbit 1, Experiment 5).—Four days after acute process (recrudescence) began; with serum injection, the condition rapidly quieted, as demonstrated in the illustration.

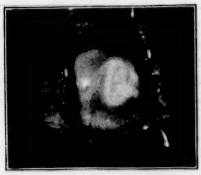


Fig. 12 (Rabbit 1, Experiment 6).—Hypopyon keratitis, twenty-four hours after inoculation of anterior chamber with Staphylococcus aureus; injection of 4 c.c. of serum.

parts of petrolatum, was fairly routine in all the cases. In a series of five cases, subtenon injections of warm hypertonic (2 per cent.) salt solution at from three to twelve hour intervals after injection of the serum were given for the purpose of increasing locally the flow of lymph, increasing the permeability of the capillaries and stimulating leukocytic activity.

Observation of these cases for changes, reactions and results as they occur almost daily during the course of such intensive treatment has revealed uniformly consistent effects, so much so that they are now almost to be anticipated as the course of such a case is followed. In from twenty-four to forty-eight hours after the initial injection, the hypopyon is reduced or has disappeared; if not, a complication (as occurred in four cases, three of these syphilitic and one unaccounted for) may be found to explain the effect. Hypopyon may reappear with increased corneal and conjunctival reaction when injection of the serum is delayed or discontinued (as reported in detail in seven cases of the first series of twenty-three cases), but invariably disappears promptly when injection of the serum is resumed (the same local treatment being administered). Besides the noticeable effect on hypopyon, almost invariably there is relief of pain, rapidly subsiding conjunctival and iritic reaction and a clearing away of ulcer débris, such as does not usually occur in these cases, the ulcer itself taking on a clear and clean appearance early in the process of repair. The result of this prompt healing and clearing away of ulcer débris is found in the surprisingly mild opacities which remain, and in many instances the vision obtained is far beyond expectations. Here again we find our observations are perhaps accounted for, are really

Fig. 13 (Rabbit 2, Experiment 6).—Violent infection of anterior segment, control rabbit, twenty-four hours after inoculation with Staphylococcus aureus.

Fig. 14 (Rabbit 1, Experiment 6).—Hypopyon keratitis being controlled by further injection of serum after inoculation of anterior chamber with Staphylococcus aureus.

expressions of the nonspecific reaction to serum injection, conclusions arrived at by numerous investigators, especially Heindenham, Teague and McWilliams,[53] Davis and Petersen [54] in researches relative to the lymphagogue effect following protein or nonspecific injections. A case in illustration of these observations is worthy of brief outline:

J. S., aged 6 years, admitted to New York Eye and Ear Infirmary, Feb. 21, 1919, suffering with pustule of cornea (phlyctenular). Phlyctenular conjunctivitis had been present for the last month. Examination revealed the usual type of severe involvement by phlyctenular pustule. On admission, the usual catharsis and feeding, with local hot bathing and administration of atropin and argyrol were carried out, until March 15, three weeks after admission, when a line of hypopyon appeared. March 16, there was 2 mm. of hypopyon, and the corneal process and iritic reaction was more violent. Without any change in the local or general treatment and without any surgical interference or cautery, 1,000 units of serum was injected. In twelve hours, the hypopyon had completely disappeared, and the conjunctival and corneal reac-

Fig. 15 (Rabbit 1, Experiment 6).—Control of infection in injected animal after inoculation of anterior chamber with Staphylococcus aureus.

Fig. 16 (Rabbit 1, Experiment 6).—Complete control of infection.

tion was improved; in forty-eight hours, the eye was almost entirely quiet, and three days afterward, March 22, the patient was discharged, the eye being open and only slightly injected.

53. Teague, O., and McWilliams, H. I.: Intravenous Vaccine Therapy, J. Immunol, **2**: 375 (June) 1917. McWilliams, H. I.: Is the Hyperleukocytosis Following the Injection of Typhoid Bacilli into Immunized Rabbits Specific? J. Immunol. **1**: 159 (April) 1916.

54. Davis, B. F., and Petersen, W. F.: A Comparative Study of Lymph and Serum Ferments During Serum Shock Reactions, J. Exper. Med. **26**: 84, 1917. Petersen, W. F.: The Ferment Antiferment Balance and Its Relation to Therapeusis, Arch. Int. Med. **20**: 515 (Oct.) 1917. Protein Therapy and Nonspecific Resistance, 1922.

It cannot be doubted that here a systemic influence is causative in the pustule with hypopyon and that it is promptly met by the systemic effect of the serum. The patient left hospital four days after injection of 1,000 units.

Many similar cases I have observed and reported in which the same local treatment was being administered without effect, and no definite change in the condition of the eye (in some cases progressing in spite of treatment) could be noted, when immediate improvement followed injection of the serum.

Fig. 17 (Experiment 7).—Two days after inoculation of superficial layers of cornea (Staphylococcus aureus): a roughening with the slightest involvement, injected animal.

Fig. 18 (Experiment 7).—Two days after inoculation of superficial layers of cornea (staphylococcus aureus): definite ulceration; control animal.

*Penetrating Wound (Infection).*—An analysis of the eighteen cases of infection after penetration furnishes some striking observations. In almost every case there is relief of pain, diminished conjunctival and iritic reaction, and a quieting of the infectious process as though it were transformed from a violent, inflammatory one to a definitely mild type. Very noticeable also is the clearing and transparency of the anterior segment of the eye, with disappearance of hypopyon, and this often occurs even in those cases observed late and progressing to inevitable infection of the vitreous chamber (panophthalmitis).

It is quite obvious that the best opportunity for observation of clinical effects of the serum is offered by cases of penetrating wound of the cornea with infection, because the only effective local treatment is that of hot fomentations and atropine, antiseptics being of little value; whereas, in ulcus serpens with hypopyon, the effect of cauterization and antiseptics cannot be as clearly separated in many cases from the effect induced by protein injection. However, numerous cases of hypopyon keratitis, in spite of intensive and persistent local treatment, do not react until serum injection is given, as in the case reported above.

A fairly typical example of effects to be observed in penetrating wounds with infection is to be found in the case here reported.

F. C., a man, aged 29, admitted, March 27, 1922, with a penetrating wound of the cornea, no hypopyon. The third day, in spite of the usual intensive local treatment, hypopyon of 2 mm. developed over night. The lips of wound were whitish; the entire cornea was hazy, and there was the usual iritic reaction. Not *until* hypopyon developed was the serum injected (3,000 units). A peculiarly violent local and constitutional reaction followed (great edema of the injected arm, temperature, 101.5 F., nausea and headache, mild erythema of arm and body), but in twenty-four hours there was, coincident with this general reaction, relief of ocular pain and definite reduction in the hypopyon, which disappeared entirely in forty-eight hours. Daily improvement (clearing of the anterior segment) allowed his discharge ten days later.

This complete reversal in the behavior of an anterior infection can be attributed only to sudden systemic stimulation (omnicellular plasma-activation of Weichardt[50]) and increased local resistance through increased permeability of the capillaries and cellular elements.

*Panophthalmitis.*—Injections of the serum were administered in eleven cases of panophthalmitis in order to observe the reaction. Restoration in any degree was not to be anticipated; nevertheless, the serum effect may be observed in these cases. Roemer says: "Any one who regards the word serum as a miracle is suffering under an illusion!"

A typical case was one observed at the very onset of the infection, receiving 5,000 units, with marked improvement in from twenty-four to forty-eight hours and relief of pain. But subsequent injections failed to check the process, and slowly but quietly, only moderate reaction being present, disintegration of the globe continued. The anterior segment, however, was clear and transparent as though *irrigated* by a lymphagogue effect of a definite systemic influence. This case was similar to nine of the eleven cases observed; two were extremely violent and were seen in the late stages of the infection.

*Ulcus Serpens.*—In the fourteen cases of ulcus serpens observed, injection of the serum was given with confidence in the result. And these results were quite uniform and indicative of the case in which protein therapy should always be administered. Cauterization was employed in all but two of the cases, because the ulcer was of the violent type, almost invariably located centrally, most frequently developing in patients past middle life, and to delay local intensive measures in order to observe serum effect would obviously prove little and risk much. Furthermore, under such conditions, when delay was possible and justified, improvement and healing may have occurred anyway, regardless of injection without intensive antiseptic measures. Here the natural forces of resistance may have been sufficient without either injection or antiseptic aid.

## EXPERIMENTS

The systemic reaction to inoculation of the cornea and anterior chamber with *Staphylococcus aureus* and

Fig. 19 (Experiment 8).—Two days after inoculation of superficial corneal layers with pneumococci; slight involvement in the injected rabbit.

Fig. 20 (Experiment 8).—Two days after inoculation of superficial corneal layers with pneumococci; definite central ulceration in control rabbit.

with the pneumococcus, as affected by injections of antidiphtheric serum, was observed in a series of experiments on seventeen rabbits, which I carried out with the assistance of Mr. Edgar Burchell in the Eno Laboratory of the New York Eye and Ear Infirmary.

EXPERIMENT 1.—March 22, the left cornea was inoculated with emulsion of *Staphylococcus pyogenes-aureus,* (twenty-four hour culture from acute dacryocystitis). Inoculation was made by introducing a small sterile hypodermic needle into the cornea at a point 2 mm. from the upper limbus, carrying it

well into the deep stroma toward and extending for a distance of 3 mm. to the center of the cornea. The needle was then withdrawn, dipped into the aureus emulsion, and reintroduced into the corneal opening as before.

March 24, there was marked injection of the conjunctiva, the cornea hazy throughout, pointing dense opacity over the area of inoculation, 5 mm. in diameter, and the iris indistinctly seen. Subcutaneous injection of 4 c.c. (3,200 units) of serum was given.

March 26, there was marked improvement, with greatly reduced conjunctival reaction; cornea much clearer; active area not pointing, and definitely smaller. Iris now could be observed through cornea. Four c.c. of serum was injected.

March 28, improvement continued, and circumcorneal injection was reduced, the cornea clearing, area of active involvement now smaller and with sharp outline, as though localized and controlled. Four c.c. of serum was injected.

Further observation showed continued improvement, and in another week there was no reaction, a small point of opacity remaining, with a moderate nebula about it. This result is demonstrated by Figure 1.

EXPERIMENT 2.—March 26, a subcutaneous injection of 4 c.c. (3,200 units) of serum was given.

March 29, the deep stroma of the left cornea was inoculated (in the manner described above) with emulsion of *Staphylococcus pyogenes-aureus*. Immediately on withdrawal the inoculating needle from the cornea, the point was plunged into blood serum in a Petri dish for cultivation, in order to make sure that the organism introduced into the cornea was an actively virulent one. Injection of 4 c.c. of serum was given.

March 30, there was no involvement of the eye except the mildest conjunctival congestion. The cornea was clear and transparent, and there was no point of corneal involvement but a small roughened area at site of penetration by the needle. On the other hand, the blood culture inoculation showed an actively growing colony, proof of the virulence of the micro-organism. Further observation showed no involvement of the eye, and it was entirely normal in three days.

EXPERIMENT 3.—March 27, the left cornea of Rabbit 1 was inoculated (in the same manner as above) with the Fraenkel-Weichselbaum *Diplococcus lanceolatus* (twenty-four hour culture from acute conjunctiva). A subcutaneous injection of 4 c.c. of serum was given. March 27, the left cornea of Rabbit 2 was inoculated in the same manner and with the same culture, as a control, but no serum was injected. The micro-organism with which both rabbits were inoculated was at the same time transferred to fresh media (blood agar) in order to prove its activity.

March 29, the eye of Rabbit 1 was very moderately injected, there being a small point of corneal involvement (opacity with apparent mild ulceration). The rest of the cornea was clear and transparent; the aqueous clear; the iris unaffected. Rabbit 2 suffered marked injection; the area at the site of corneal penetration was actively ulcerating, about 3 mm. in extent. The entire cornea was slightly hazy; iris vessels dilated; question as to hypopyon. Blood-agar culture inoculation showed active growth of the micro-organism.

March 30, Rabbit 1 improved. There was very moderate injection, and a very slight point of corneal involvement. Otherwise, the eye was normal. Rabbit 2 was worse, if there was any change.

March 31, Rabbit 1 had little or no reaction. The condition in Rabbit 2 was unchanged.

Further observation showed no involvement in Rabbit 1, while Rabbit 2, in the course of a week, was improved, and then rapidly recovered.

EXPERIMENT 4.—May 1, 1923, the stroma layer of the left cornea of Rabbit 1 was inoculated (in the same manner as in the first experiment) with an emulsion of *Staphylococcus pyogenes-aureus* (a twenty-four hour culture from acute dacryocystitis). A subcutaneous injection of 4 c.c. (3,200 units) of serum was given. The left cornea of Rabbit 2 was inoculated in the same manner and with the same culture, but no serum was injected, as a control. The micro-organism was at the same time transferred to fresh blood-agar for cultivation.

May 2, Rabbit 1 showed slightly swollen lids, moderate purulent discharge, moderate conjunctival and iritic reaction, and slight but diffuse haziness of the cornea; at the point of inoculation there was a small abscess with adjacent infiltration; the aqueous was turbid, the peripheral iris vessels were engorged, and the pupil was slightly contracted and sluggish (Fig. 2). Rabbit 2 presented swollen lids, abundant purulent discharge, marked conjunctival reaction and circumcorneal injection, and a large abscess of the cornea; the entire cornea was diffusely infiltrated, and the aqueous was whitish, and obscured the iris (Fig. 3).

May 3, the condition of Rabbit 1 was unchanged. Rabbit 2 was worse, the lids were tightly glued together. Rabbit 1 received 4 c.c. of serum.

May 4, Rabbit 1 showed definite improvement; haziness of the cornea was reduced; the corneal abscess was smaller and infiltration was less dense; the iris vessels remained engorged, but the pupil was larger (Fig. 4). No serum was injected. Rabbit 2 remained unchanged (Fig. 5).

May 8, Rabbit 1 showed more improvement; reaction was slight; the corneal abscess was apparently controlled; the rest of the cornea was clear (Fig. 6). In Rabbit 2 the cornea was partly destroyed.

Without further serum injection, the eye of Rabbit 1 became entirely quiet, the controlled lesion remaining at the site of inoculation with a vascular fasciculus about it extending from the adjacent limbus. The eye was removed for microscopic study.

EXPERIMENT 5.—April 5, the anterior chamber of the right eye of Rabbit 1 was inoculated with *Diplococcus lanceolatus* (a twenty-four hour culture from acute dacryocystitis). A sterile hypodermic needle was passed through the cornea into the anterior chamber, withdrawn and applied to the culture, then immediately reintroduced through the corneal passage into the anterior chamber, again withdrawn and applied to a Petri dish of blood serum for cultivation. Four c.c. of serum (3,200 units) was injected (12 c.c., 9,600 units, had been injected previously over a period of four and one-half days). The anterior chamber of the right eye of Rabbit 2 was inoculated in the same manner as that of Rabbit 1, and 4 c.c. of serum injected. The right eye of Rabbit 3 was inoculated in the same manner as those of Rabbits 1 and 2, but no serum was injected, as a control.

April 6, the lids of Rabbit 1 were almost normal; there was moderate conjunctival reaction; moderate pericorneal injection; a point of whitish infiltration at the site of penetration; faint haziness of the cornea; injection of the peripheral iris vessels; moderate dilatation of the injected pupil, and no hypopyon (Fig. 7). The blood-agar transplantation from the needle stab, when withdrawn from the site of inoculation, showed a definitely active micro-organism. The lids of Rabbit 2 were slightly swollen; there was moderate conjunctival reaction and pericorneal injection; a point of whitish infiltration at the site of penetration; the rest of the cornea diffusely hazy, somewhat obscuring the iris; the peripheral iris vessels engorged; the pupil small; no hypopyon (Fig. 8). The lids of Rabbit 3 were swollen and injected, with considerable purulent discharge; the conjunctiva edematous, with marked congestion; there was violent circumcorneal injection; there was a small point of ulceration of the cornea at the site of penetration; the rest of the cornea diffusely opaque, obscuring the iris and the contents of the anterior chamber; hypopyon—a definite violent infection of the anterior segment of the globe (Fig. 9).

April 7, the appearance of the eye of Rabbit 1 was the same if not slightly improved; no serum was injected. In Rabbit 2 there was no change, or perhaps the eye was less acutely affected; 8 c.c. (6,400 units) was injected. The lids of Rabbit 3 were more swollen and glued together; a purulent discharge filled the conjunctival sacs; the cornea was partly destroyed. Smear and culture from this eye were positive for the pneumococcus.

April 9, the eye of Rabbit 1 showed marked conjunctival and iritic reaction over night; the entire cornea became diffusely infiltrated and quite opaque in the upper three quar-

ters, and densely so about the site of penetration; the aqueous was slightly hazy, the iris congested, the peripheral iris vessels engorged, the pupil small and very sluggish to light (Fig. 10). This definite indication that the anterior chamber had been actively inoculated, but the infection held in abeyance by serum reaction, now a recrudescence on the fourth day was met by an injection of 4 c.c. of serum. Rabbit 2 died twenty-four hours after injection of 8 c.c. of serum (evidently the result of serum shock), and the eye was enucleated for microscopic study. The globe of the eye of Rabbit 3 showed violent panophthalmitis; the cornea was destroyed.

April 10, Rabbit 1 was definitely improved, and each day thereafter became more quiet; April 13 (four days after the recrudescence) there remained a slightly elevated hazy area of the cornea at the site of penetration, an apparently encapsulated and controlled area of involvement (Fig. 11). The eye was later enucleated for microscopic study.

EXPERIMENT 6.—May 24, the anterior chamber of the left eye of Rabbit 1 was inoculated with an emulsion of *Staphylococcus pyogenes-aureus* (a twenty-four hour culture from a furuncle) in the same manner as in Experiment 5, the needle being dipped in the emulsion and reintroduced through the previously made corneal penetration, withdrawn and plunged into blood-agar for cultivation. Four cubic centimeters (3,200 units) of serum was injected. The anterior chamber of the left eye of Rabbit 2 was inoculated in the same manner as in Rabbit 1. No serum was injected, as a control.

May 25, Rabbit 1 showed slightly swollen lids, moderate conjunctival and iritic reaction, entire cornea hazy, the penetrating wound ulcerated with deep infiltration about it, aqueous hazy with scattered hypopyon, the iris congested and the pupil small (Fig. 12). Four c.c. of serum was injected. The blood-agar inoculation showed an active growth. Rabbit 2 presented a violent reaction; there was profuse discharge, entire cornea hazy, aqueous whitish, violent infection of the anterior segment of the eye (Fig. 13).

May 27, Rabbit 1 had improved, cornea clearing; aqueous a trifle cloudy, the corneal ulcer sloughing and depressed, but clean, the iris congested and contracted. Rabbit 2 had panophthalmitis.

June 4, Rabbit 1 showed no reaction; the cornea was slightly hazy, the ulcer clean; vascularization was taking place from the adjacent limbus (Fig. 14). Later the eye became entirely quiet (Fig. 15, June 7, and Fig. 16, June 11).

EXPERIMENT 7.—April 18, the superficial layers of the cornea of the left eye of Rabbit 1 were inoculated with *Staphylococcus pyogenes-aureus* (a twenty-four hour culture from a furuncle) in the following manner: A trephine, 4 mm. in diameter, was applied over the center of the cornea, the epithelium and Bowman's membrane being removed, and the superficial stroma then being scarified in opposite directions with the point of a cataract knife. An emulsion of *S. pyogenes-aureus* was immediately poured into the conjunctival sacs, covering the entire globe, and allowed to remain so for five minutes, when the eyelids were closed. Four cubic centimeters (3,200 units) of serum was injected. The superficial layers of the cornea of the left eye of Rabbit 2 was treated in the same manner as in Rabbit 1, except that the eye was allowed to be suffused in the emulsion for four minutes instead of five before the lids were closed; no serum was injected, as a control.

April 19, there was moderate conjunctival reaction in both rabbits; the corneal area of Rabbit 1 was clear and roughened; that of Rabbit 2 was moderately opaque.

April 20, Rabbit 1 showed the same conjunctival reaction; there was very moderate discharge; the denuded area showed only the slightest nebulous roughening (Fig. 17). Rabbit 2 gave the same conjunctival reaction; there was moderate discharge; the denuded area was opaque and ulcerated (Fig. 18).

April 21, Rabbit 1 showed little or no reaction; there was no discharge; the denuded area was clear and almost entirely covered by epithelium. The corneal ulcer of Rabbit 2 worse, and on April 27 improved, the denuded area remaining moderately opaque.

EXPERIMENT 8.—Two rabbits were inoculated exactly in the same manner as in the previous experiment, except that the superficial layers were dissected from the trephined area, when the pneumococcus was used as the infecting microorganism, and the results were similar in every way to those related above (Figs. 19 and 20).

EXPERIMENT 9.—April 28, the deep stroma of the cornea of the right eye of Rabbit 1 was inoculated as in Experiment 1, except that the corneal passage made by the sterile needle was filled with *Staphylococcus aureus* by crowding it into the wound with the needle point. Four cubic centimeters of serum was injected; 4 c.c. of serum had also been injected the day before. Rabbit 2 was treated in the same manner, but no serum injected, as a control.

April 30, both rabbits showed violent abscess of the cornea, hypopyon almost filling the anterior chamber; the eye of Rabbit 1 was as actively affected as that of Rabbit 2. Continued injections of serum were ineffective, the eye of each rabbit going on to panophthalmitis.

This experiment is demonstrative of that which must be accepted—that an overwhelming dose of virulent micro-organisms cannot be met by immunization, even though it be of a specific type, as in diphtheria itself.

These experiments show consistent results similar to those which obtain in clinical investigation. While they cannot be regarded as conclusive evidence, because of the limited number so far carried out, they cannot be considered accidental in any sense. Continued experiments of this character now in process of investigation but not complete for incorporation in this paper may yield even more definite conclusions.

These experiments are being continued, first with the idea of determining the effect of previously injected immunizing doses for prophylactic purposes; secondly, to establish the relative value of injections of antidiphtheric serum and normal horse serum concentrated in the same manner and containing the same nitrogen content, thereby studying the question of the diphtheric element as a possible highly potential influence in the therapeutic reaction; and, thirdly, to demonstrate a maximum and minimum dosage in relation to the time and character of the infection. The significance of the time of the shock effect and the period of recrudescence, as shown in the experiments related above, are obviously of great importance in the study of this therapy.

An analysis of these experiments is hardly necessary for this audience. Suffice it to say that the effect shown in the corneal lesions is more noticeable than when the anterior chamber is inoculated. This is to be expected in view of the anatomic difference in structure and relationship. Furthermore, it is in keeping with the experiments of Loeffler, that the normal cornea shares in general bacterial immunity; Roemer has shown it to be true of pneumococci; and Ehrlich and Roemer proved it in regard to antitoxic immunity to the toxin of diphtheria. A. Leber, Roemer, Zur Nedden and others have shown that the aqueous shares only in some degree (receptors of the first order) in general bacterial immunity. The vitreous is believed to share so slightly in any kind of immunity that only under violent inflammatory reaction is there any evidence at all of the presence of immune bodies.

## GENERAL CONSIDERATIONS

Antidiphtheric serum has been employed recently by a few American observers in numerous indications other than those outlined in my report. Wilmer and Shine have used it in cases of sympathetic ophthalmia, both observing improvement after injection. J. W. Burke has given it in six cases of idiopathic iritis with three brilliant results, two cases with definite benefit, and

one without effect. Cutler notes a result in iridocyclitis. McReynolds, Lambert, Fox, Shober Smith, Shine, Hansell, Bell, Cranston, Sloan and others have observed the effect in penetrating wounds with infection. Goldstein used it in an unusual case of severe corneal ulceration (after it had been treated by the usual intensive local measures for six weeks), with prompt and curative effect. Posey employed it in keratitis from exposure. Fox claims a prophylactic influence for the serum in penetrating wounds and in certain operative cases.

The indications which seem to justify its use may be enumerated as follows: ulcus serpens and hypopyon keratitis, infection after penetration and panophthalmitis, idiopathic iritis and iridocyclitis (hidden focal infection?), keratomalacia and sympathetic ophthalmia, and for prophylactic purpose in certian cases. It has been employed, however, for disease of almost every anatomic element of the eye, also for the different infections to which the eye is exposed and without regard for the pathologic or bacteriologic diagnosis. These observations are obviously confusing and doubtful and do not contribute at this time to the real value of the therapy or to solving the problem of its effect on the organism.

Antidiphtheric serum, as it is now prepared, offers perhaps the best form of foreign protein for administration to the human. Because milk varies in its potential and toxic action, numerous commercial preparations are now undergoing experimentation. Normal horse serum, "yatsencasein," albumose, proteose, nonspecific vaccines, etc., have not as yet been shown to possess with any certainty a more reactive and potential effect than that of antidiphtheric serum. Furthermore, the dosage and reaction are quite uncertain. The dosage of the serum is certainly more definite and its anaphylactic effects are more clearly understood. Banzhaf's method of preparing the serum by isolating the antitoxin globulins permits the use of a concentrated serum, which lessens the incidence of serum sickness and facilitates the administration of large doses. According to Park, this method gives a concentration of about six times the original potency. Darier,[55] Frogier [23] and others claim to have shown that it is ten times more potent than normal horse serum, which may be due not only to its high concentration and method of preparation, but also, perhaps, to the constituents attributed to the diphtheria bacillus or toxin. Moreover, the theory as to the properties and structure of antibodies in immunity lends striking evidence (Vaughan,[8] Kraus,[45] Ichikawa,[42] Ludke [40]), that there is a direct antagonist, a special antigen or protein (globulin) in the serum more active than a mere animal protein (milk, egg albumin), the method of concentration of the serum adding to the concentration of the antibody elements in the serum. If there is any virtue to be had in the nonspecific diphtheritic elements (colloids?) in the serum, there is a decided advantage and preference in antidiphtheric serum over other forms of proteins employed in this therapy. Furthermore, the facility of obtaining and administering suitable doses of antidiphtheritic serum is a distinct advantage not to be overlooked.

As for anaphylaxis, a concentrated serum is not so likely to produce serum sickness as whole serum, since a smaller quantity of it is injected. History of previous anaphylactic conditions, previous diphtheria, status lymphaticus, asthma or hay-fever-like attacks in persons proved susceptible in a stable and horse environment are well established as probable contraindications to serum injections. I have not observed serious anaphylactic effects in any case, and doses have varied from 1,000 to 5,000 units; a total in one case of 12,000 units (given in 3,000 and 2,000 unit doses).

The time of injection and the size of the dose have been given much consideration and have been referred to with some emphasis in my previous reports. The matter of anaphylaxis is of importance in this regard because sufficiently large doses, or daily repeated smaller doses just short of the anaphylactic stage, are essential, just as they are in the treatment of diphtheria, in order to produce a decided reaction and effect. This is necessary because the serum is almost immediately effective (ten minutes after injection, Rosenau [1]), and this stage of preanaphylactic effect, representing the incubation period of disease, is the period of gradually increasing sensitivity of the body cells to the protein or disease element (bacteria) as a measure of body defense against the invader. The first stage of anaphylaxis is known to be one of exhilaration and stimulation, followed by one of depression, paresis, arrest of breathing, etc. For this reason, it is my practice, after cauterizing an active ulcer of the cornea, to have the serum injected as soon as possible. For the same reason, we find an explanation for the constant observation that the effect of the serum is manifest always within from twenty-four to forty-eight hours after injection, the time of hypersensitivity and cellular reaction. It is clear, therefore, that the time of the injection is important, as well as the size of the dose and the relation to local treatment.

### PROTEIN REACTION

No one doubts the theory and facts as to the evidence of general and local resistance or the changing virulence of infecting micro-organisms, for the study of immunity, which has for its object the understanding of the mechanism of resistance to and recovery from infection, is today an established science. The virulence of micro-organisms and the resistance of body cells are coincident and constant factors both in health and in disease, so well illustrated by the presence of endogenous infections, which do not represent so much an assumption of pathogenic power on the part of the micro-organism as a disturbance of the detensive mechanism of the host whereby the normal relations are disturbed, and micro-organisms that normally are harmless become infective and disease-producing.

Does the power of the body cells, when permeated by a foreign protein, elaborate a specific antiferment by which the protein is destroyed (Vaughan [8])? And does this form the basis of a correct understanding of infection and immunity? The intimate connection between anaphylaxis and infection certainly indicates that anaphylaxis may be the first step in the process of immunity; moreover, that the period of hypersensitivity and susceptibility of the body cells to protein, just short of the depressing stage of anaphylaxis, is the stage of cellular activity (general and local) that accounts for the effective therapeutic reaction.

In protein therapy, the reaction is expressed (depending on the character and amount of the agent injected and the sensitization of the particular individual to it) by a chill, rise in temperature, variations in pulse and blood pressure, sweating, nausea, nervous irritability, skin reaction, glandular activity, permea-

55. Darier, A.: Sérothérapie dans les infections oculaires, Clin. opht., 1911, p. 22; Vaccines and Serums in Ophthalmic Therapy, Ophthalmoscope 13: 263, 1914.

bility of the capillaries, lymphagogue effect and certain variations in the blood—such as concentration, altered coagulability, leukocytic response, increased antiferment and alteration in the antibody titer of the serum of the patient. The study of this reaction has grown out of nature's own method of resistance and repair, constantly demonstrated by the reaction from counterirritants, vaccines, enzymes, drugs, yeasts, colloidal metals, bacteria, etc. It is believed, therefore, that in a similar manner there is brought about in the body true tissue stimulation and activation, the therapeutic effect being produced by altering the reactivity of the whole organism, rather than by directly influencing the cause of the pathologic process.

Luithlen [51] determined the permeability of the abdominal capillaries by injecting sodium iodid into the veins of rabbits and tested the rate at which it entered into the Ringer's solution previously injected into the peritoneal cavity. Siegert and also Schmidt [31] found that small doses of protein increased the permeability. Starkenstein produced corneal ulcers in rabbits, then observed the rate at which dyes would diffuse out at the site of the lesion after a variety of nonspecific injections. It was concluded that nonspecific injections increased the permeability of the capillaries for a short period and later caused a definite lessening of the permeability. Heidenhain classifies certain proteins as lymphagogues because of the marked increase in the lymph flow which they produce. Teague and McWilliams [53] believe the lymphagogue effect is responsible largely for the therapeutic influence of protein injections, because the antibodies of the blood stream are forced into the lymph spaces and there may destroy the invading micro-organisms. Davis and Petersen [54] investigated this effect on the lymph flow, using dogs in whom a lymph fistula was made at the thoracic duct and then injecting killed colon vaccine intravenously to produce the shock effect. These experiments and others are highly significant when one repeatedly observes the effect of antidiphtheric serum on the lymphatic structures (refractive media) of the eye, the effect on hypopyon, and clearing of the anterior segment, already alluded to.

### CONCLUSION

May I venture to predict at this time that when protein effects are more clearly defined and understood and protein preparations selected perhaps for a specific reaction, the time will come when the accepted treatment of pneumococcic and staphylococcic infection of the refractive media of the eye, in addition to local treatment, will consist in the administration of a foreign protein as soon as it can possibly be injected, just as now antitoxin is demanded immediately and in sufficient dosage in the treatment of diphtheria itself.

I wish to extend my thanks and appreciation to Dr. W. E. Lambert, on whose service at the New York Eye and Ear Infirmary most of these cases reported have been studied, and also to Mr. Edgar Burchell for his care and assistance in the experiments carried out in the Eno Laboratory.

180 West Fifty-Ninth Street.

**Eminent Relatives.**—Galton amassed a large amount of data proving quite conclusively that exceptional mental ability runs in families. Eminent persons commonly have eminent near relatives, and the more eminent the person the greater the number of eminent relatives on the average that will be found in his family.—Holmes: Studies in Evolution and Eugenics, New York, 1923.

## THE ACTIVE AGENT IN MILK INJECTIONS *

OTTO BARKAN, M.D.
AND
R. F. NELSON
SAN FRANCISCO

The successful use of foreign protein injections for ocular disease dates from 1915, when it occurred to Schmidt [1] of Prague to use cow's milk for these injections. He chose milk because it was easy to procure and because the chemical composition of this animal secretion is a constant, whereas the composition of artificial preparations of proteins and their derivatives is subject to considerable variation. Since Schmidt's first report on the use of milk injections in ocular, as well as in general, disease, milk has been used in many thousands of cases by ophthalmologists, often with striking benefit. The literature is full of reports of good clinical results, and from personal experience we can heartily endorse the use of milk in certain kinds of ocular disease. There is no doubt of its efficacy in iritis, iridocyclitis and gonorrheal conjunctivitis, and as a prophylactic in infections of the eyeball following perforating injury.

The usual method of procedure has been to inject intramuscularly from 3 to 15 c.c. of fresh cow's milk previously sterilized by boiling. In Vienna, the milk was boiled for exactly three minutes. This period was chosen as being long enough to destroy bacterial contamination and yet not long enough to inactivate whatever might be the active component contained in milk. Others, among them Schmidt, boiled the milk as long as ten minutes. In most cases the injection was followed by a rise of body temperature with general malaise, which usually subsided within eight hours, so that, if the injection was made in the morning, the patient was rid of the milk fever by evening. The course of the milk fever shows but little variation except in its intensity and the degree of temperature. Either no fever at all followed the injection, or the temperature rose to 100, 101 and 102 F. The following morning, marked subjective and clinical improvement could be noted.

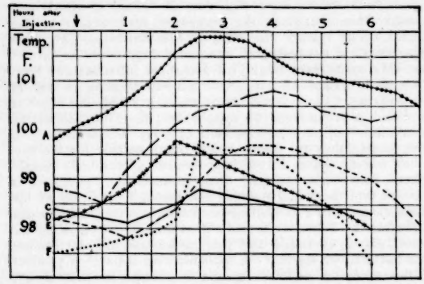
It is a curious but not an isolated fact that an injection of milk, if its chemical composition truly is constant, should cause a rise of temperature in some individuals and not in others. Schmidt tried to explain this difference in reaction by assuming a different susceptibility of the individual. This assumption of a varying individual reaction to milk proteins, however, would be quite incapable of explaining our observation that an injection of cow's milk should cause a reaction in the same individual at one time and not at another. Schmidt even classified a large series of cases accordingly. In this series he found that patients with cancer and diabetes, for instance, did not react with a rise of temperature, whereas others, such as patients with acute arthritis, reacted markedly. He believed that different types of cases were rendered refractory or susceptible to milk according to the nature of their respective diseases. Curiously enough, it has never occurred to any one further to inquire into the cause of the variable degree of reaction following parenteral milk

* Read before the Section on Ophthalmology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Schmidt, R.: Ueber Proteinkörpertherapie und über parenterale Zufuhr von Milch, Med. Klin., 1916. No. 7.

injections, and further to put the question whether these variations might not be due to differences in composition of the milk itself.

It occurred to one of us in 1920 that the variations in reaction might well be accounted for by the varying bacterial content of the various samples of milk employed. It was a striking fact that in the hands of the same observer using cow's milk and the identical technic, marked febrile reactions and good clinical results were frequent in Vienna but rare in San Fran-




Febrile reaction to substances injected: *A*, filtrate of whole milk; *B*, whole milk (300,000 bacteria to each cubic centimeter); *C*, certified milk; *D*, washings from culture; *E*, inoculated certified milk; *F*, culture from whole milk.

cisco. In San Francisco, we have certified milk containing less than 10,000 bacteria per cubic centimeter, and pasteurized milk containing more than 10,000 bacteria per cubic centimeter. The highest bacterial count found in pasteurized milk was 300,000 (before pasteurization).

The case here reported shows the inactivity of certified milk. It strengthened our surmise that bacterial contamination might be the active agent in producing milk fever.

In 1921, we saw a man, aged 36, suffering from an intense right-sided iridocyclitis. Except for gonorrheal urethritis in 1916 and two slight attacks of lumbago, his history was unimportant. The focus of the iridocyclitis proved to be in a chronic vesiculitis. The iridocyclitis lasted five weeks in spite of all internal and local treatment, and necessitated opiates to secure even a moderate amount of sleep. The patient refused milk injection. During his convalescence he had sciatica. Pus was found in the seminal vesicles, by Dr. M. B. Wesson, who treated the vesiculitis by massage. The fourth massage was followed by a sudden rise of temperature to 104 F., with chills and an acute recurrence of the iridocyclitis. There was marked chemosis, injection, tenderness and photophobia. The pupil reacted practically not at all to atropin. A milk injection was decided on, and the patient admitted to the hospital. Ten cubic centimeters of certified milk boiled only one and one-half minutes was injected intragluteally the same evening, with no local or constitutional effect. The iritis was worse the next day. Some milk from a suburban goat was therefore procured on the supposition that this might be richer in bacteria than cow's milk, and 10 c.c. was injected after boiling three minutes. Within five hours the temperature rose to 100.6 and the patient suffered from considerable malaise. No local treatment was used that night except atropin. The next morning the eye was almost pale, comfortable, without photophobia, and the pupil dilated well under atropin.

This interesting experience led us to undertake the following experiments:

## EXPERIMENTS

We standardized our technic with guinea-pigs in several control experiments until the rectal temperatures were found to vary not more than 0.5 degree F. in the same animal. We then made injections with various samples of milk, and having obtained conclusive results, we conducted the experiments whose temperature curves are shown in the accompanying chart. Each curve represents the mean of the temperatures of five guinea-pigs, of the same body weight, injected at the same time with an equal amount (1 c.c.) of the same kind of milk or other material. Each animal weighed between 250 and 350 gm. They were injected in groups of five. Each group was injected with one of six preparations, previously sterilized by boiling for three minutes:

1. Certified cow's milk; 10,000 bacteria at time of delivery, kept on ice for four days.
2. Cow's milk, noncertified or whole milk (unpasteurized), 300,000 bacteria per cubic centimeter, kept on ice for four days.
3. Filtrate of the foregoing noncertified or whole milk, which, after passing through a Berkefeld filter and plated, proved sterile.
4. Culture from foregoing whole milk. This was obtained by plating whole milk twelve hours old and incubating on blood agar and on plain agar for thirty-six hours. Colonies were removed on platinum loops, centrifuged in sterile physiologic sodium chlorid solution, washed twice, suspended in physiologic sodium chlorid solution, and kept on ice for three days. This preparation might be termed a milk vaccine.
5. Washings from the foregoing culture or vaccine. This consisted of a supernatant salt solution from the first centrifugate in Experiment 4, passed through a Berkefeld filter. Cultures made from this solution proved sterile.
6. Certified milk, the same as No. 1 above, forty-eight hours old, was inoculated with a bacterial culture twenty-four hours old which had been obtained from the foregoing whole milk (No. 2). This inoculated certified milk was left to stand at room temperature for twenty-four hours.

The difference in febrile reaction of each of the groups of animals in the respective substances injected is clearly shown by the curves in the chart and in the table.

The animals all recovered from their fever and there were no infections. Boiling for three minutes had been sufficient to sterilize the substances injected.

*Results of Experiments*

| Substance Injected | Maximum Rise of Temperature | Duration of Fever Over 1 F. Hours |
|---|---|---|
| Certified milk (cow's) | 0.7 | — |
| Whole milk (bacterial count, 300,000) cow's milk, noncertified | 2.3 | 4½ |
| Filtrate of whole milk (sterile) | 1.8 | 2¾ |
| Culture from whole milk (washed) | 2.0 | 3 |
| Washings from culture (sterile) | 1.5 | 1¼ |
| Inoculated certified milk | 1.9 | 4 |

## CONCLUSIONS

Parenteral injection of milk of low bacterial count (certified milk, 10,000 germs per cubic centimeter) caused fever of 0.5 degree F. for one hour only. Milk of high bacterial count (whole milk, 300,000 germs per cubic centimeter) caused fever of 2.3 degrees F. This fever remained over 1 degree F. for four and one-half hours, and took nine hours to subside. That this difference in febrile reaction is due to bacterial action is suggested by the fever following an injection of a bacterial culture obtained from the whole milk, and is proved by the fact that certified milk when inoculated

with bacteria from whole milk and allowed to stand for twenty-four hours gives the same febrile reaction as the whole milk. That, however, the constitutional reaction, for which we have taken the rise of temperature as an indicator, is not due to the injection of bacterial bodies alone is shown by the less intense fever that follows on injection of: (1) the bacteria-free filtrate from whole milk (No. 3), and (2) the sterile filtrate from the bacterial culture obtained from whole milk (No. 5, washings). The active agent in the washings must consist either of bacterial proteins or protein products which are the result of disintegration of bacterial bodies, or of an excretion (exotoxin) of the bacteria. The action of the whole milk filtrate must also be due to these elements, with the addition perhaps of albumoses, proteoses and peptones—the products of bacterial action on the native milk proteins themselves.

In other words, the febrile reaction is due to:

1. Dead bacterial bodies (bacterial proteins).
2. Soluble substances:
   (*a*) Bacterial proteins from disintegrated bacteria.
   (*b*) Perhaps also milk proteins or decomposition products from these albumoses, proteoses and peptones the result of bacterial action on the native milk proteins.

In our opinion, the native milk proteins in themselves (and in the amounts used clinically) are inactive.

In this connection it is interesting to note that many workers in the field of foreign protein and nonspecific therapy, such as Luithlen [2] and Hanzlik,[3] hold that the constitutional reaction following injection of proteins and various other agents is due to disturbances in physical and chemical equilibriums in the tissues and fluids of the body rather than a direct toxic action of the complex protein itself. In the case of proteins, we know that the products of decomposition (peptones, albumoses, etc.) are more active physiologically than the whole protein. It is for this reason that Nolf [4] injects peptone instead of protein, peptone being a mixture of protein products.

Clinically, we have observed that as long as we can obtain only certified milk the injection is practically valueless. We have had few good results in San Francisco with fresh pasteurized and fresh whole milk, although the guinea-pig reacts to these milks more markedly than it does to certified milk. It was our clinical experiences that urged us to the investigation described above; they, in turn, have shown that we might have expected that fresh certified milk would not cause a reaction in the human subject. In other words, the "milk reaction" is not a milk reaction at all. It depends on milk bacteria and the soluble products of their metabolism, and not on native milk proteins. If we wish to obtain a reasonably certain febrile reaction, and if we insist on milk for purposes of protein therapy, we should use only a milk of high bacterial count.

The advantages and disadvantages of milk injections in comparison to other substances used in foreign protein therapy are obvious from what has been noted above, and will vary according to the locality and facilities of the individual worker. We, for our part, will in the future, as we have already begun to do, use, if possible, a more suitable and convenient agent than milk to elicit our reactions.

2. Luithlen, F.: Kolloid Therapie, Wien. klin. Wchnschr. **34**: 119 (March 17) 1921.
3. Hanzlik, P. J.: Pharmacol. & Exper. Therap. **14**: 329, 1920.
4. Nolf, P.: Presse méd. **25**: 583, 1917.

## ABSTRACT OF DISCUSSION

ON PAPERS OF DR. KEY AND DRS. BARKAN AND NELSON

DR. FREDERICK A. KIEHLE, Portland, Ore.: Milk injections have been enthusiastically advocated for almost every pathologic ocular condition, particularly of the inflammatory type, and yet some observers give no word of encouragement. The problems connected with nonspecific protein therapy are exceedingly intricate. As early as 1903, certain French authorities were advocating milk injection in general diseases. They were also much used in Spain at the time. In Vienna, there has been an undercurrent of feeling for some time that the dirtier the milk the more efficacious its influence. Paris and London have not given the procedure such weight as has Vienna. The reports for America are confusing. My own experience has not been such as to encourage me in its further use. My cases were largely of a chronic inflammatory type. The whole fabric of nonspecific protein therapy is still in the weaving. Thus far it seems to be granted that there is produced a stimulation of metabolism; that this stimulated metabolism registers an elevation of body temperature. No milk protein thus far discovered is organ-specific for the eye, which merely shares in the improvement of the body metabolism. Just what happens, then, is uncertain, though it is believed that there is a washing out through the blood of the tissue fluids, with a number of resultant characteristic changes in the blood. When we consider that milk as produced by the lacteal glands is sterile and that as we use it it is teeming with bacteria, we see that the contamination is purely a product of the processes of milking and handling; so that if Dr. Barkan is correct, and I believe he is, we have been looking for therapeutic effects from an element in milk that is a contamination; and this contamination is adventitious both in quantity and in content. In my opinion, Dr. Barkan is certainly wise in his determination to use in the future a therapeutic protein that is more stable and more dependable than that in milk.

DR. WILSON JOHNSTON, Portland, Ore: It speaks well for the conservatism of Dr. Key that in face of such favorable results from serum therapy he has kept his feet on the ground and not abandoned proved remedies, such as cauterization, saline injections, mercurial ointments, and hot fomentations. Many of the agents that we have been calling "local" in reality owe their efficacy to the protein reaction produced. Investigators agree as to the changes occurring in the tissues and blood during a protein reaction, but the agent responsible for these changes is still unknown. It is probably a product of protein decomposition—somewhere between protein and peptones. Clark says that protein therapy causes a washing out of the tissue fluids into the blood and that this causes a number of changes in the blood. The evidence at present available is insufficient to indicate which of the changes observed is really of chief clinical importance. Wright and his co-workers find "that antibacterial substances come not from the tissues but from the leukocytes. The leukocytes spontaneously set free bactericidal and opsonic substances when vaccines in appropriate concentration come into operation on the leukocytes in the blood, both in the living body and in the test tube." Of great importance to us is the fact that this reaction takes place not only in the living body but also in the test tube. A test tube vaccine response is possible which will enable us to tell whether a patient is or is not capable of an immunizing response. This is in line with the work of Elschnig, Wood and Verhoeff, in producing antigens to test the sensibility of patients to lens matter and uveal tissue, and gives promise that the hope expressed by Dr. Key in his conclusions may soon be realized. This is a cellular reaction, and cells do not all respond in the same manner to the same kind of stimulant. Some cells hold fast their contents and give up their antibodies only under special or selective stimulant. Witness a negative Wassermann reaction changed to a positive under a provocative dose of arsphenamin. May not the fact that 50 per cent. or more of people are immune to diphtheria or typhoid fever be the reason why such good results are obtained following the injection of antidiphtheria serum or typhoid vaccine?

DR. JOHN O. MCREYNOLDS, Dallas, Texas: While my individual experience with serum injections is limited, I have been

so impressed with its value that I urged Dr. Key to present to this section the result of his more extended investigation. I think it is at least worthy of careful consideration, but not to the elimination of other methods of combating hypopyon keratitis.

DR. W. H. WILDER, Chicago: I think that a continued study of this subject will show us how much in error we may have been in the past in our supposed remarkable results from the use of tuberculin in cases that we have thought were tuberculosis of the eye. Whether or not all such cases that have responded locally or generally to injections of tuberculin were tuberculosis is a very much mooted point, and discredit has been thrown on all our theories in regard to that disease of the eye as a result of the recent investigations in serum and protein therapy. Injections of milk have seemed to me very much like the prescriptions of our confrères of a couple of generations ago that were called shotgun prescriptions. Dr. Barkan calls attention to the fact that in injecting milk we are practically giving shotgun prescriptions in that we do not know exactly what ingredient is causing the result. Many who are using protein therapy refuse to use milk, in spite of the reports that have come from foreign countries as to its great value, thinking that we should use some more exact form of protein. My experience on this subject has been confined chiefly to the use of typhoid vaccines. In my work at the Presbyterian Hospital in Chicago in cases of uveitis and sympathetic ophthalmia, we use typhoid vaccines rather than any other protein chiefly for the reason that we can graduate the dose readily, and also that we know what we are using. The results are sometimes surprising, and I have had cases of inflammation in which it seemed that the eye would be lost; and yet, after the use of such protein injection, recovery followed. Similar good results were achieved years ago by the subconjunctival use of solution of mercuric oxycyanid or even a hypotonic salt solution, and possibly the curative effect was accomplished by exciting a reactivity of the tissues in much the same way as is done by the administration of serums or proteins. So we must withhold judgment on the whole subject until we have further light; but it seems to me it would be wiser to use that serum or protein about which we have some definite information. It would be better to find the bacteria in the milk and try to use vaccines made from them, as the paper suggests.

DR. GEORGE SLOCUM, Ann Arbor, Mich.: Following some experimental work by Dr. D. M. Cowie about 1918, I began the use of typhoid vaccine in traumatic inflammations of the uveal tract, and my experience in the use of this method of treatment has been in accord with Dr. Wilder's experience. We first began with subcutaneous injections, but later gave them intravenously with even better results. I believe that a foreign protein, such as typhoid vaccine, is an efficient remedy in assisting in the control of this type of uveitis, and that it should be tried carefully in this type of case.

DR. OTTO BARKAN, San Francisco: I should like to be a little more optimistic in regard to the therapeutic results of milk injection than is Dr. Kiehle. I should not like to do without milk injections had I no better substitute. In regard to certain proprietary products, it remains to be proved whether toxins are not contained in these preparations. I am gratified to hear from Dr. Wilder and Dr. Slocum that they have had such good results with typhoid vaccine, as I have not had the courage to inject it intravenously.

DR. BEN WITT KEY, New York: In reply to Dr. Johnson's statement in regard to the use of local treatment together with injection of serum, I have already pointed out that to inject the serum without intensive local treatment in hypopyon keratitis would prove little and risk much. On the contrary, the results shown to have occurred in rabbits were obtained without local treatment; furthermore, in cases of penetrating wound of the anterior chamber with infection, in which local measures are of little or no value, the effect of the serum has been demonstrated in innumerable cases. I do not wish to overstate the situation, but suggest that in the next case of penetrating wound with infection, before the infection becomes overwhelming, the serum be injected (3,000 units in adults, and 2,000 units every other day for two or three doses), hot applications and atropin being employed locally, and the results noted. The weights of the animals used in the experiments were approximately the same when used in the same experiment; otherwise, little value could be attached to the results. As to dosage, I have already stated that this is one of the problems of this study. However, the dosage of antidiphtheric serum is more certain than that of milk and other proteins used for the therapeutic reaction. On the one hand, sufficient protein reaction must be obtained for a definite therapeutic effect, because hypersensitization begins about ten minutes after injection (Rosenow and others) and is reactive up to the point of serum sickness or shock; on the other hand, an overdose may produce serious symptoms of anaphylaxis. I have employed milk in a few instances with such violent reaction that I discontinued it. I have not observed similar shock effects after serum injection.

## THE USE OF BENZYL BENZOATE IN THE TREATMENT OF ANGINA PECTORIS

ROBERT H. BABCOCK, M.D.
CHICAGO

I shall make no attempt to give the literature pertaining to the use and action of this particular benzyl ester further than to say that its mode of action, as pointed out by Macht, is to relieve spasm due to contraction of smooth muscle fiber. Hence it has been employed largely in cases of renal colic and of bronchial asthma. So far as I know, the only article dealing with its use in angina pectoris is a paper by Dr. A. B. Spach [1] of Chicago. In that paper the author reported six cases in which more or less complete relief followed the administration of the remedy. In one of them the blood pressure was low, 100 systolic, whereas, in the others, varying degrees of hypertension existed.

My attention was first called to the use of benzyl benzoate in Heberden's angina by my office associate, Dr. Bayard Holmes, Jr., who stumbled on to its ability to relieve this formidable affection through prescribing it for renal colic. The patient, Mr. T., was a Jew, aged 53, whom I had treated years earlier for sclerosis of the heart and arteries giving rise to attacks of precordial pain and dyspnea, with, as I now recall, rapid and arrhythmic action of the heart. The man was so neurotic and emotional that I could never be quite certain of the exact significance of his attacks of pain. It is likely, however, in the light of subsequent events, that his precordial pain was angina pectoris. At all events, when, after the lapse of several years, renal colic developed, Dr. Holmes, who saw him in an attack, prescribed benzyl benzoate with the result that it relieved not only the colic but also the angina. This observation by Dr. Holmes, which antedated and was wholly independent of the article by Dr. Spach, was never published but was reported at a clinical meeting of the staff of Lakeside Hospital in 1919, I believe. Since that time, Dr. Holmes and I have prescribed the remedy in approximately twenty instances of what seemed to us typical attacks of angina pectoris. I shall not attempt to narrate the particulars of these cases and shall give a brief account of only five in which decided relief of the pain has followed the more or less continuous use of the drug.

### REPORT OF CASES

CASE 1.—Mr. P., a short, thick-set Italian, aged 53, was seen in March, 1921, because of pain beneath the upper sternal region which prevented his walking for more than a few hundred feet. This soon thereafter became so intense that he

1. Spach, A. B.: Illinois M. J. 39: 28 (Jan.) 1921.

remained at home and was attended by Dr. Holmes. The patient was kept at rest in bed for several weeks, his diet carefully regulated, and vigorous elimination resorted to in the hope of relieving the indigestion complained of and reducing somewhat his high blood pressure, which stood at 220 systolic, and 120 diastolic. The cardiac findings were those of hypertrophy of the left ventricle without murmurs. At length the physician decided to try the effect of benzyl benzoate in 30 drop doses in milk four times daily. Under the effect of this remedy, the man became able to walk at his ordinary gait without pain. He kept up this treatment for months, and ceased needing medical attention. At the end of April, 1923, the man reappeared for examination, as he had again begun to feel not so well. He admitted having neglected his medicine for the preceding three months. His blood pressure was 215 systolic, and 100 diastolic. There was an absence of heart murmurs except a systolic bruit in the aortic area on assuming the dorsal decubitus.

CASE 2.—Mrs. N., aged 68, was seen in September, 1921, because of a retrosternal pain of such severity as to compel her to cease walking after having gone a short distance. The family and personal history were unimportant. The systolic pressure was 150, and the diastolic, 80. The heart was somewhat increased in size, and there was a soft murmur accompanying the first tone at the apex. From that time to this she has taken benzyl benzoate practically without omission, and declares it has saved her life. On rare occasions she has had the attacks of angina when walking in the evening after dinner. On coming to the office after such an experience, the systolic pressure has sometimes shown striking fluctuation, some of our records reading as high as 180 and once or twice as low as 132. The diastolic has always remained at 80. We have not been able to explain these differences, since for the most part the systolic pressure has stood at about 150. I incline to the view that the higher pressures have been at times when she has suffered from the angina.

CASE 3.—Mr. G., a Jewish merchant, aged about 60, was seen about five years ago when suffering from dyspnea with attacks of palpitation and pain in the epigastrium, associated, as well as could be determined, with indigestion and smothering attacks. He presented the usual findings of sclerosed arteries, cardiac hypertrophy and a systolic bruit in both mitral and aortic areas. These were believed to indicate definite cardiac and aortic sclerosis. He was seen at varying intervals, usually of months. At length he moved to Chicago and was seen by me at his home when suffering much from attacks of substernal pain believed to be typical angina. Attacks of this kind became at length so intense and frequent as to necessitate the daily use of nitroglycerin and even of morphin. His suffering grew so alarming that one night his daughter summoned Dr. Holmes in great haste. It was then that Dr. Holmes hit on the happy thought of trying benzyl benzoate. It is no exaggeration to say that within forty-eight hours the pain disappeared not to return during the three months he lived. That was in 1920, I believe.

CASE 4.—Mr. G., a Jewish merchant, aged 61, was seen in December, 1922, because of a pain in the upper middle portion of the chest, which had developed not long before and prevented his accustomed walk to and from his store. He presented a systolic blood pressure of 124, and diastolic of 65, with secondary but moderate left ventricle hypertrophy. A murmur was not present. Besides advice regarding his diet and a periodic cathartic, he was told to take 30 drops of benzyl benzoate in milk four times daily, and to be careful not to attempt to hurry up hill to his home. He has been seen repeatedly during the last five months. He declares he is now able to walk to his place of business without distress, provided he does not hurry, and considers his improvement due to the medicine. The heart and vascular findings have not changed materially over the original examination.

CASE 5.—One additional case merits brief mention. A physician, aged 54, who resided in a northern state, was seen by Dr. Holmes in May, 1922, during my absence from Chicago. He stated that he had suffered for two years from such intense angina pectoris without relief from any remedy that he was considering the abandonment of his practice. His blood pressure was not high, only 130 systolic and 90 diastolic, but he had a mitral systolic murmur of apparently myocardial, not endocardial, origin. He was told to give benzyl benzoate a trial, and two weeks later reported entire freedom from his angina. He has not been heard from since.

Unfortunately, not all the patients to whom this agent has been given a trial have experienced so much benefit. A young Italian, with a syphilitic aortitis and free aortic regurgitation, has received no benefit from benzyl benzoate. He is obliged to depend on nitroglycerin, but when seen recently, after having taken potassium iodid for two weeks, he thought he could walk a little better.

We have records of others who reported no benefit at all, while some say they have been somewhat more comfortable. Accordingly, it may be said that the administration of this remedy in the treatment of angina is of the nature of an experiment. Therefore, sufferers from this distressing malady are always informed of the uncertainty of benefit. Its prolonged use over many months has not apparently been attended by unpleasant or harmful effects, and only rarely has a patient complained of stomach disturbance. It is always prescribed in milk or cream, and generally in 30 drop doses four times daily.

The remedy is not believed capable of correcting the pathologic condition responsible for the distress. It is strictly palliative and not curative. Nor is it believed that it will ward off the fatal catastrophe which terminates more or less suddenly practically all cases of organic or true angina pectoris.

## CAUSE OF ANGINA

The varying and uncertain effects of benzyl benzoate in cases of angina pectoris bring up the questions, Why does it relieve the pain in some persons but not in others, and What can be its mode of action? The answer to the latter query is found in part in its property of relieving spasm in certain instances through its action on smooth muscle fiber, as in renal colic. But can this action account for the ability of benzyl benzoate to assuage, or even relieve wholly, so terrifying and dangerous a malady as Heberden's angina? The explanation must depend, it seems to me, on the underlying cause of angina.

I have no intention to discuss here the various hypotheses that have been advanced to explain this often truly agonizing and death-dealing pain. I shall mention only two, therefore: sclerosis of the coronary arteries with its consequent effects on the heart muscle, so well known to us all, and Sir Clifford Allbutt's view that the cause is found in disease of the aorta and not of the coronaries. In substantiation of his theory, he lays particular stress on the nerve supply to the aorta in especially its suprasigmoid portion. According to Allbutt, Thoma found pacinian bodies in the adventitia or outer fibrous sheath of the vessel, while Keith and MacKenzie discovered its root or suprasigmoid base to be richly supplied with sensory nerve endings. Furthermore, the sensory nerves and pacinian bodies are distributed throughout the whole length of the aorta, even to its branches within the abdomen, as, for instance, the celiac plexus. Based on these anatomic facts, Allbutt's argument briefly stated is as follows: The aorta is so constructed as to withstand sudden and, under some circumstances, severe changes in pressure occasioned by each discharge of blood from the ventricle. During violent exercise, these alternations in internal pressure may be very great. Yet the elasticity of the vessel is such that in health the tension is passed

on along the course of the aorta without giving rise to the subjective consciousness of strain. When, however, the aorta, especially its ascending limb, has undergone pathologic change, acute, subacute or chronic, the state of things is reversed.

Ordinary pressure within the vessel is sustained without the production of symptoms; but, when intra-aortic pressure becomes increased beyond a certain limit, as in walking or from emotional excitement, anger for example, vascular tension becomes such that the middle and outer coats of the suprasigmoid portion or, indeed, of the whole arch may be great enough to occasion their stretching with consequent impingement on their sensory nerve endings. This fact is then telegraphed to the sensorium, whence response is sent out through the ganglion of the cervical sympathetic to the system of sensory nerves supplying the upper portion of the chest and even into one or both arms through the brachial plexus. Pain generally felt, therefore, is retrosternal, corresponding to the situation of the aortic arch. When, during such an attack of angina, the pulse becomes altered in rate or rhythm, it is due to stimulation of the sympathetic or parasympathetic, which send filaments to the cardiac plexuses.

In support of his hypothesis, Allbutt points out that postmortem examination always reveals more or less obvious pathologic change in the aortic coats. He does not deny that the coronary arteries, myocardium and even pericardium may display sclerotic, degenerative or fibrous change, but he contends that pathologists are generally so taken up with examination of the heart that they overlook or give but scant attention to the aortic coats, particularly the adventitia. If a few patches of sclerosis are seen on the surface of the intima, they are content with noting these and do not cut through and carefully examine the middle and outer coats to detect what pathologic change they may have undergone.

Almost innumerable cases are cited from pathologic reports in support of this contention. In further support of his view of angina being aortic and not coronary in origin, Allbutt points out the frequency of severe angina in acute aortitis whether due to syphilis or to other acute infections, while typical poststernal angina is a frequent accompaniment of aneurysm affecting the ascending aorta or entire arch. The rich supply of sensory nerve ending to the sinuses of Valsalva explains the excruciating agony attending aneurysm of this portion of the vessel.

Without entering into a discussion of the merits of Allbutt's explanation of the mode of production of angina, I must confess that it appeals strongly to me as applicable to the cases I observe. Recently a man, aged 58, was examined who stated that he was unable to walk any considerable distance without very uncomfortable pain in the center of the chest or midportion of the sternum. Without giving details of the findings, let me say that a fluoroscopic inspection revealed marked dilatation of the entire thoracic aorta with hypertrophy of the left ventricle. Auscultatory findings were practically negative, and the blood pressure was 142 systolic, and over 75 diastolic. In such a case the conclusion is inevitable that the aortic coats are atheromatous and lessened in elastic recoil. It seems reasonable to me to assume that increased tension of the vessel must, by stretching, impinge on the sensory nerve endings and so occasion the uncomfortable symptom described.

### ACTION OF BENZYL BENZOATE

But, granting that to be true in the instance just mentioned, how may one explain the varying effects of benzyl benzoate in the cases previously reported in this paper? Even though the remedy does exert its action on smooth muscle fiber, it can scarcely be supposed to relax a vessel stiffened and more or less inelastic. How account for its failure to help the young Italian who has pronounced syphilitic aortitis with regurgitation? The hypothesis that appeals to me, therefore, is that in those instances in which the remedy is effectual there is a spasm of some part of the vascular system responsible for such a degree of tension of the aortic coats, where sensory nerve endings are most abundant, that is, in the suprasigmoid limb of the arch. Hence retrosternal distress. Under the influence of the daily use of benzyl benzoate, vascular spasm is prevented or kept down to such an extent that pressure within the aorta does not become greater than the diseased coats can withstand without subjective consciousness of the strain. If, for instance, the distal portion of the aorta is comparatively free from atheroma, sudden or undue increase of tension at its base can be passed on through relaxation of the comparatively healthy portion of the vessel, and painful stretching of the arch does not take place.

How, one may ask, does the likelihood of spasm apply to the few cases here so briefly reported? In the instance of Mr. T., who suffered from what were regarded as attacks of renal colic, it is not unreasonable to assume that vascular spasm was associated through the action of the parasympathetic nervous system so as to occasion a degree of intra-aortic pressure which the vessel could not pass on as should normally occur, and angina resulted. Although the actual facts attending his death a few months later are not known to me, it may reasonably be assumed that he succumbed to vagal death, as do practically all persons who suffer from organic angina.

In Case 3, in which daily anginal seizures were almost miraculously abolished, I incline to the view that there was vascular spasm depending on action of the parasympathetic, that is, a vagotonia, since, before typical angina was recognized, the patient's dyspnea and arrhythmia were believed to be due to gastro-intestinal disorder, and treatment addressed to the digestive tract had given relief until a time came when angina developed.

As regards Case 2, the one fact suggesting possible arterial spasm is the striking variability in our blood pressure records. It varied from 180 systolic to as low as 132, with a constant diastolic reading of 80 mm. The patient was generally most free from pain and best able to walk when the systolic figure stood at about 150 mm. She did not complain of abdominal symptoms, and yet had to exercise care not to overload her stomach or partake too often of meat. It was necessary also for her to resort to a weekly cathartic in order to keep entirely comfortable. Nevertheless, she was emphatic in her declaration that benzyl benzoate had saved her life.

Why the remedy proved so beneficial in Case 1, in which there was always such a marked degree of hypertension but no other cardiac findings than left ventricle hypertrophy, I cannot explain. If symptoms referable to vagus stimulation were present, they were shown only by flatulent indigestion. The same may be said of Patient 3, who has been under observation occasionally for the last five months. He has been partially, though

not wholly, relieved. In future, attention will be addressed more closely to the possibility of stimulation of the parasympathetic portion of the vegetative nervous system.

As this paper was being finished, a man, aged 45, was seen who had consulted several physicians because of discomfort in the midline of the chest at about the center of the sternum. This sense of discomfort did not amount to actual pain, and yet it was felt when walking, and caused the patient to stop in order to allow the uncomfortable sensation to pass away. The only factor of possible etiologic importance was a soft chancre in 1900. Several Wassermann blood tests had been negative, however. A roentgen-ray examination by a competent roentgenologist had shown nothing wrong with the aorta, and only slight hypertrophy of the left ventricle. Physical examination showed a pulse rate of 80 in perfect rhythm, and a blood pressure of 135 systolic, with 75 diastolic. All heart tones were clear in the upright position, and the aortic second was not accented. In the dorsal decubitus, a soft, systolic murmur could be heard in the aortic area. The man was then told to hop up and down fifty times, after which systolic pressure rose at the end of two minutes to 170, and the pulse rate sank to nearly its previous figure. That seemed to show a satisfactory response to the exercise; but in a minute or two the man said that he felt the distress in the chest, and on his blood pressure being again taken it was found to be 190 systolic, with 90 diastolic. As the distress subsided, the pressure fell a few points, but not to 170 as directly after the hopping test. He was then told to lie down and raise himself into a sitting posture six or eight times. This again produced the distress and raised the systolic pressure to 192, the diastolic remaining at 90. The percussion and auscultatory findings, however, were the same as before the exercise. The effect of the exercise seemed to warrant the conclusion that the rise of blood pressure raised intra-aortic pressure to a point which stretched its adventitia sufficiently to pinch the sensory nerves and so occasion the distress. On this hypothesis, the patient was given benzyl benzoate as an experiment.

The case just described suggests the thought that, were the blood pressure taken during the anginal seizure in all instances, it might assist greatly in understanding the state of the vascular system directly responsible for the attack. May it not be a transient rise of pressure in cases displaying normal or subnormal sphygmomanometric figures that causes pain after the manner described by Allbutt? If so, the benefit occasioned by the daily use of benzyl benzoate is readily understood, since, taken at four-hour intervals during the day, its effect on the smooth muscle fibers contained in the blood vessels may persist for a sufficient length of time and to a degree sufficient to prevent or lessen painful stretching of the aortic coats.

SUMMARY

Benzyl benzoate has been prescribed for twenty or more persons suffering from the retrosternal pain and pressure feelings characteristic of organic angina pectoris. Of those kept under observation, six at least have been so distinctly relieved as to justify daily employment of the remedy for months, or so long as benefit is experienced. In some of our cases, very slight if any amelioration of pain has resulted, notably in a young Italian with syphilitic aortitis with free regurgitation. In instances of hypertension, no invariable or sustained reduction of blood pressure has been observed.

In no instance have harmful effects been detected. Administered in milk or cream, it does not appear to disturb the stomach. As a general rule, 30 drops, poured directly from the bottle, are ordered four times daily. The remedy would appear to prove efficacious in cases in which vascular tension or spasm produces such a degree of intra-aortic pressure as to pinch the sensory nerve endings richly supplied to the aortic coats, in accordance with Allbutt's explanation of organic angina pectoris.

453 Deming Place.

## THE KOLMER COMPLEMENT FIXATION AS A SPECIFIC TEST FOR SYPHILIS *

F. W. HARTMAN, M.D.
AND
C. E. REYNER, B.S.
DETROIT

The complement fixation test for syphilis, initiated by Wassermann, has been made the subject of such exhaustive investigation and so many thorough statistical studies that it is practically impossible to find any new avenue of approach. Indeed, we find it difficult to say anything of this laboratory procedure without repeating, verbatim, the words of other workers. Lacking certain knowledge of the specific complement binding substances present in the tissues of the syphi-

| CHOLESTERINIZED \ KOLMER | ++++ | +++ | ++ | + | 0 | Totals |
|---|---|---|---|---|---|---|
| ++++ | 270 | 1 | 0 | 0 | 0 | 271 |
| +++ | 21 | 2 | 0 | 0 | 0 | 23 |
| ++ | 46 | 8 | 0 | 0 | 0 | 54 |
| + | 44 | 25 | 10 | 5 | 0 | 84 |
| 0 | 89 | 44 | 28 | 32 | 0 | 193 |
| Totals | 470 | 80 | 38 | 37 | 0 | 625 |

Table 1.—Of the total of 6,947 serums tested, 625 were positive with the Kolmer technic, or 9 per cent; 432, or 6 per cent., were positive with cholesterinized antigen and water bath fixation at 38 C.; there were 69.1 per cent. as many positives with this method as with the Kolmer technic; since there were no false positive reactions, 31 per cent. of known syphilitic patients were missed; only 45 per cent. 4 plus were found, as compared with 75 per cent. 4 plus with the Kolmer technic.

* Because of lack of space, this article is abbreviated in THE JOURNAL by the omission of several tables. The complete article appears in the reprints. A copy of the latter will be sent by the authors on request.

litic individual, we cannot yet attain our goal in the diagnosis of syphilis. Facing the fact that antigens prepared from the causative organism are entirely unsatisfactory and that the tissue extract antigens in common use are in no possible way biologically specific; and, further, since the complement binding substance is most abundant at the height of the infection, as opposed to the antibody production in bacterial dis-

| PLAIN \ KOLMER | ++++ | +++ | ++ | + | 0 | Totals |
|---|---|---|---|---|---|---|
| ++++ | 389 | 11 | 0 | 0 | | 380 |
| +++ | 38 | 8 | 1 | 0 | | 47 |
| ++ | 31 | 19 | 7 | 4 | | 61 |
| + | 15 | 23 | 16 | 14 | | 68 |
| 0 | 17 | 18 | 15 | 19 | | 69 |
| Totals | 470 | 79 | 39 | 37 | | 625 |

Table 4.—Of a total of 6,947 serums tested, 625 were positive with the Kolmer technic, or 9 per cent., 256, or 8 per cent., were positive with plain four hour cold room incubation at from 4 to 8 C.; there were 89 per cent. as many positives with the plain as with the Kolmer technic; no false positives were found; thus the plain antigen missed 11 per cent. of syphilitic patients; further, of the positives, 75 per cent. were 4 plus with the Kolmer technic as compared with 68 per cent. 4 plus with plain antigen.

eases, it seems logical to consider the procedure in the light of a chemical reaction.

Until the exact nature of this product of spirochetal activity in the body is discovered, we must content ourselves with perfecting the procedure in hand, finding some common ground and establishing at least a working standard or a standard for comparison.

There are at least twelve widely known modifications of the original Wassermann technic, and nearly every laboratory makes individual combinations or modifications. Honest efforts have been made toward standardizations, but all have failed because of uncompromising disagreement on every step of the procedure. This disagreement has prevailed because of the absence of examinations of the various procedures, the steps peculiar to each, and the absence of an outstanding superior technic.

The work of the last six years on the standardization of the Wassermann test by Kolmer and his co-workers, and the new test resulting from this research, opens again the possibility of a working standard. Our investigations of this possibility include:

1. Comparison of the Kolmer technic with the routine technic—6,947 blood specimens.
   (*a*) Kolmer vs. cholesterinized antigen water bath fixation.
   (*b*) Kolmer vs. plain antigen four hour cold room fixation.
2. Comparison of the Kolmer technic with cholesterinized (0.2 per cent.) antigen four hour cold room fixation.
3. Comparison of the Kolmer technic with the Kahn test, 863 blood specimens.
4. Critical study of each patient's history and physical examination, especially in cases of disagreement and negative results with the Kolmer technic.

## CONDITIONS OF STUDY

Blood specimens were taken for the Wassermann test as a part of the routine complete history and physical examination required for each patient. These were collected in dry, sterile, stoppered, test tubes, kept in the cold room at from 4 to 8 C., and examined daily, never more than thirty-six hours after withdrawal. The serums were indentified only by number, and the results of the various tests were usually read by more than one observer. After the results had been recorded and reported, both the history and the physical examination were reviewed. In any case, when questions arose, the history, physical examination and Wassermann test were checked or repeated.

## TECHNIC

1. Our routine technic, employed for the last four years, is based on the "quarter unit" amount, the total volume in each tube being made up to 1.25 c.c. The antisheep hemolytic system is used. The complement dose is two units, the unit being determined daily by titration with two units of amboceptor. The antigens are alcoholic extracts from human heart muscle, one being fortified by the addition of 0.2 per cent. choles-

| CHOLESTERINIZED, ICEBOX \ KOLMER | ++++ | +++ | ++ | + | 0 | Totals |
|---|---|---|---|---|---|---|
| ++++ | 194 | 16 | 1 | 4 | 1 | 216 |
| +++ | 8 | 7 | 2 | 2 | 1 | 20 |
| ++ | 9 | 6 | 2 | 0 | 3 | 20 |
| + | 6 | 4 | 2 | 3 | 6 | 21 |
| 0 | 6 | 1 | 0 | 0 | 1 | 2 |
| Totals | 217 | 34 | 7 | 9 | 11 | 278 |

Table 7.—With the Kolmer technic and cholesterinized (0.2 per cent.) antigen, four hour icebox fixation from 4 to 8 C., 3,300 parallel tests were done; 8.4 per cent. of these, or 278, were positive by one or the other method; 267 were positive with the Kolmer technic, leaving eleven cases positive only with the cholesterinized antigen icebox fixation; just three of these gave a suggestive history of syphilis, making eight probable false positives.

terin. These are never used in more than one-fourth the anticomplementary dose, and two doses are used in the antigen control with the same preliminary incubation as in the tests. The serums, after being heated to 56 C. for fifteen minutes, are diluted 1:5; 0.25 c.c. and 0.125 c.c. of the diluted serums are used in the

tests, and 0.5 c.c. in the control tube. The preliminary incubation was four hours in the cold room at from 4 to 8 C. with the plain alcoholic antigen, and three-fourths hour in the water-bath at 37 C. for the cholesterinized antigen. Quantitative readings are made with the aid of Citron's scale.

2. Exactly the same technic as the foregoing was followed in the third series, except that four hour cold room fixation at from 4 to 8 C. was used with the cholesterinized 0.2 per cent. alcoholic extract of human heart as an antigen.

3. In the Kahn test, antigens were obtained from Dr. Kahn, and antigens made after his method were compared with those furnished by him. In the test proper, his technic was followed exactly and the tests mechanically shaken for from two to three minutes.

| KAHN \ KOLMER | ++++ | +++ | ++ | + | 0 | Totals |
|---|---|---|---|---|---|---|
| ++++ | 20 | 2 | 2 | 0 | 0 | 24 |
| +++ | 13 | 1 | 1 | 0 | 1 | 16 |
| ++ | 8 | 0 | 4 | 2 | 0 | 9 |
| + | 3 | 2 | 0 | 2 | 0 | 7 |
| 0 | 12 | 1 | 5 | 5 | 0 | 23 |
| Totals | 63 | 6 | 12 | 9 | 1 | 91 |

Table 10.—Of 863 serums run in parallel with the Kolmer technic and the Kahn test, there were ninety-one positive; only sixty-eight were positive with the Kahn test, or 75 per cent. as many as with the Kolmer; further, the Kolmer gives 70 per cent. 4 plus positives as against 37.6 per cent. 4 plus positives with the Kahn test.

4. In the Kolmer technic, the details of the quantitative method were followed faithfully, and both antigen and hemolysin were furnished by Kolmer for the first 2,000 tests. In the meantime, antigen made after his method and meeting his requirements was produced and compared with his antigen. Temperatures for the fixation were carefully controlled in the cold room at from 4 to 8 C.

The results of the comparative study is summarized in the accompanying tabulations.

Fifty-three instances in the 625 positive serums are found in which the Kolmer technic alone is positive. These constitute the questionable group and were the subject of special investigation. Seventy per cent. were treated cases, and the remaining 30 per cent. presented a suggestive history, as gonorrhea, chancroids, repeated miscarriages or cohabitation with known or probable syphilitic persons. These fifty-three cases represent also ones in which there was inhibition only in the 0.1 c.c. or at most the 0.1 c.c. and 0.05 c.c. tube, so that we should have missed many of them had not the quantitative test been employed. These weakly positive reactions have taught us the importance of any inhibition, however slight.

Turning to those diseases previously reported as producing positive complement fixation, our series includes 100 cases of tuberculosis with positive sputum, forty-five of pneumonia in which the blood was taken at the height of the fever, eighty-six of diabetes examined before any treatment was instituted, and 130 of pregnancy. Among these, two tuberculosis patients, two pneumonia patients, three diabetic patients and three pregnant women had positive reactions, but all were confirmed by repeated tests and subsequent history.

Analysis of the 6,322 negative cases shows three distinctly false negative reactions: stricture of the rectum, syphilitic cirrhosis of the liver probably congenital, and congenital syphilis which became positive under treatment. There are doubtless others in the treated group.

## CONCLUSIONS

1. A new test, proposed by Kolmer, is superior to our routine technic as described, giving 31 per cent. more positive reactions than with cholesterinized antigen and water bath fixation, and 11 per cent. more positives than the plain antigen with four hour icebox fixation.

2. It is less sensitive than cholesterinized antigen cold room fixation, but gave no false positive reactions.

3. It is superior to the Kahn test, because of the difficulty in reading the latter, and because it gives 25 per cent. more positive reactions.

4. Though fifty-three cases were only weakly positive with the Kolmer technic and negative with the other technics, not a false positive was found in this group.

5. In the light of the new test, weakly positive reactions bear a new significance, pointing, as they have invariably, to syphilitic infection throughout this series.

6. Conditions other than syphilis have given no confusing reactions; that is, tuberculosis, pneumonia, diabetes and pregnancy.

7. Despite the fact of biologic nonspecificity, this new test is proving itself specific through practical experience.

---

**The Corpus Luteum.**—Recent work by Leo Loeb has added valuable information regarding the corpus luteum as an organ of internal secretion. He has confirmed by experiments the theory that the corpus luteum inhibits ovulation, and has shown experimentally that ovulation may be accelerated by the removal of the corpus luteum. The absence of ovulation during pregnancy is thus thought to be due to the continued presence of the corpus luteum. Loeb's most important contribution has been to demonstrate by animal experimentation the power of growth which the corpus luteum has over the uterus. He has shown that the corpus luteum elaborates a substance which has a sensitizing action on the uterus. In the nonpregnant animal a slight decidual reaction is produced in the uterine mucosa which recedes in a short time as the corpus luteum retrogresses. In the pregnant animal the decidual reaction is much more marked and remains permanent during pregnancy in the form of the so-called maternal placenta (i. e., decidua). This continued reaction is the result of the persistence of the corpus luteum and to the irritation of the growing ovum, as is proved by Loeb's experiments. —Graves: Gynecology, Ed. 3, Philadelphia, W. B. Saunders Company, 1923.

# THE CLEAN INUNCTION TREATMENT OF SYPHILIS WITH MERCURY *

H. N. COLE, M.D.
J. G. HUTTON, M.D.
AND
TORALD SOLLMANN, M.D.
CLEVELAND

In a preliminary paper, we [1] pointed out that the mercury in the practice of mercurial inunction is probably absorbed only from that part of the ointment which has been rubbed into the hair follicles and into the entrance of the sebaceous and sweat glands; and that therefore any mercury remaining on the surface of the skin, after the rubbing is stopped, would be only an objectionable nuisance, without any therapeutic effect.

In order to test this assumption, a series of forty-four patients was treated with mercury rubs in the usual manner, except that the skin was carefully cleansed with benzin at the end of the half-hour rubs, so as to remove all mercury that had remained on the surface.

The results bore out our expectations: Mercury absorption, as judged by gingivitis, etc., occurred in the same proportion of cases, and after the same average number of rubs, as one would expect with the old method, in which the mercury is left on the skin. The removal of the surplus of mercury, therefore, did not diminish the amount absorbed. The therapeutic efficiency was, of course, also the same. Accordingly, we recommended this technic in the treatment of syphilis, since it obviates the most objectionable features of the old inunctions: the uncleanliness, liability to discovery, and folliculitis.

We are now in position to report on a further series of cases, which entirely confirm the conclusions of our first series, and establish the efficiency of this improved technic beyond any doubt.

The present series covers the past year and includes eighty-six patients (seventy males and sixteen females, including twelve primary cases of syphilis, one of them an extragenital infection; sixty-eight secondary eruptions of syphilis, two in the tertiary stage; one case of cerebrospinal syphilis; one case of late syphilis, and two cases of congenital syphilis). They were taken at random, except that they were all bed patients who could be carefully watched and studied. The inunctions were always carried on under the eye of an orderly or of a nurse. A U. S. P. IX ointment was used, containing 50 per cent. of mercury, reduced to globules of from 0.01 to 0.02 mm. diameter. Of this, 4 gm. was rubbed in for thirty minutes by the clock, at the end of which time either the ointment was allowed to remain on the skin (in eighteen cases) or the skin was carefully cleansed off with cotton and benzin (in sixty-eight cases), depending on the technic used. We shall call these "old style" and "improved technic," respectively. The rubs were repeated daily (making the tour of the body in six days) until salivation or other symptoms of mercurialism appeared. The usual routine of oral hygiene was followed.

As in our former series of experiments, it was not always possible to keep the patients as long as desired. Sometimes they would be forced to leave the hospital because of their work; occasionally family calls would intervene. Of such cases, in which mercurialism was not secured, there were 16.7 per cent. (three patients) for the "old style" technic, and 8.8 per cent. (six patients) for the "improved technic"; i. e., with the improved technic 91.2 per cent. (sixty-two patients) showed mercurial symptoms (including two patients with severe gastro-intestinal cramps instead of oral symptoms; and 83.3 per cent. (fifteen patients) with the "old style" technic. This, in itself, shows the efficiency of the "improved technic": according to the mere figures, this would appear to be even more efficient than the "old style." This could be due to the added rubbing with benzin; but more probably it falls merely within the range of accidental statistical error. For the same reason, the present "improved" series is somewhat more favorable than our former "improved" series is, which gave mercurialism in 72.7 per cent. (thirty-two patients). Adding the two series gives mercurialism in 82.1 per cent. of 112 patients for the "improved technic," against 83.3 per cent of eighteen patients for the "old style"; i. e., practically identical figures.

The same conclusion is reached when one compares the number of rubs required to produce mercurialism. With the "improved technic," this ran:

For the first series: 5, 6, 7, 8, 8, 9, 9, 10, 10, 11, 12, 13, 13, 13, 13, 13, 13, 14, 15, 16, 17, 17, 17, 17, 18, 19, 19, 20, 23; median, 13.

For the second series: 5 6, 7, 7, 7, 8, 9, 9, 9, 10, 10, 11, 11, 12, 12, 13, 13, 14, 14, 14, 15, 15, 16, 16, 16, 17, 17, 18, 18, 18, 18, 18, 18, 19, 19, 19, 19, 19, 19, 21, 22, 22, 23, 23, 23, 23, 24, 24, 25, 25, 25, 26, 27, 27, 30, 30, 30, 33, 34, 38; median, 18.

Both series: Median, 16.

With the old style technic, the number of rubs required for salivation runs: 9, 9, 9, 9, 10, 12, 14, 16, 16, 18, 18, 25, 25, 26, 29; median, 14.

The figures show that mercurialism requires the same number of inunctions, by the two technics; i. e., that the absorption is identical.

In the present series, the results were also grouped according to the degree of the mercurialism, thus:

First degree: Slight edema and tenderness of gums.
Second degree: Edema and tenderness of gums more marked. Beginning salivation.
Third degree: Marked edema, swelling and tenderness of gums. Salivation moderate.
Fourth degree: Gums swollen and very tender. On pressure over gums, pus and blood appear at junction with teeth. Salivation profuse. Glands swollen under jaws.

The results may be condensed as in the accompanying table:

*Degree of Mercurialism*

| | Old Style Technic | | | | Improved Technic | | | |
|---|---|---|---|---|---|---|---|---|
| | Cases | | | | Cases | | | |
| Degree of Mercurialism | Number | Per Cent. of Series | No. of Rubs, Range | Median | Number | Per Cent. of Series | No. of Rubs, Range | Median |
| Fourth degree | 3 | 16.7 | 9-16 | 16 | 15 | 22.1 | 7-25 | 11 |
| Third degree | 11 | 61.1 | 9-29 | 18 | 34 | 50.0 | 5-38 | 19 |
| Second degree | 0 | .... | .... | .. | 8 | 11.8 | 9-27 | 17 |
| First degree | 1 | 5.6 | 25 | 25 | 3 | 4.4 | 19-22 | 21 |
| Gastro-intestinal | 0 | .... | .... | .. | 2 | 2.9 | 17-33 | 25 |
| No mercurialism | 3 | 16.7 | 16-25 | 23 | 6 | 8.8 | 9-39 | 15 |

The table shows, again, the complete agreement of the results for the two technics. It also brings out a feature that may appear very puzzling at first glance; i. e., that the severity of the mercurialism is inverse to

* From the Department of Dermatology and Syphilology of the Western Reserve University and of the Cleveland City Hospital, and from the Department of Pharmacology and Therapeutics of the Western Reserve University.

1. Cole, H. N.; Gericke, A. J., and Sollmann, Torald: The Clean Inunction Treatment of Syphilis with Mercury, J. A. M. A. 77: 2022-2023 (Dec. 24) 1921.

the median number of rubs. This, however, is easily explained. It means merely that the more susceptible patients develop mercurialism, not only after a smaller number of rubs, but of a type that progresses in severity much more rapidly than with the less susceptible patients.

The results of all the series show that the average susceptibility is strikingly uniform in different series, if a sufficient number of patients is observed. They show also, however, that the susceptibility of a considerable number of individual patients differs widely from this average. If we give to the average a latitude as wide as from eleven to nineteen rubs, we find, in 112 observations (combining all the series), that fifty-five patients, or 49.1 per cent., are within this range; twenty-five patients, or 22.3 per cent., require less than eleven rubs (from five to ten); thirty-two patients, or 28.6 per cent., require more than nineteen rubs (from twenty to thirty-eight); i. e., about half of the patients require from eleven to nineteen rubs; about a fourth require less and another fourth more than this number. Among the factors that might be concerned in these variations of susceptibility may be named:

A. Locally: (1) Condition of the teeth.
(2) Oral hygiene during administration.
B. Systemically: (3) Idiosyncrasy and resistance.
C. Excretion: (4) Renal efficiency.
D. Absorption: (5) Efficiency of inunction.
(6) Condition of the skin.

Differences in the energy of inunction and in the oral hygiene, which play a large rôle ordinarily, probably play a relatively small part in this series, since precautions were taken to secure uniformity in these respects. No systematic attempt was made to distinguish between the other causes, but we were rather impressed with the importance of the condition of the skin as a factor in absorption. Thus, in the present series, there were five patients who had extensive, generalized, miliary, papular syphilids: all were salivated by few rubs (7, 7, 9, 10 and 11; the 9 rub patient "old style," the others with improved technic). Another congenitally syphilitic patient had an ichthyosis; mercurial effects started early, and severe salivation resulted after fifteen rubs ("improved technic"). When the skin is diseased, it may be supposed that the ointment may obtain direct access to the stratum mucosum through fissures. We have also gained the impression (but have not sufficient data for a decisive judgment) that patients whose skin is abnormally dry tend to be hypersusceptible, perhaps because such skins are more easily fissured, or perhaps because the ointment can be rubbed more easily into the ducts when the glands are not actively secreting. This would be somewhat analogous to the observation of McConnell[2] that individuals with a very dry skin were more prone to industrial dermatoses. His observations were made in studying dermatoses due to cutting oils, and the eruptions seen in printers. He explains this phenomenon as due to the fact that the epidermal cells of patients with a dry skin are dried up and they lose their resistance, and that their sweat and oil ducts are open and dry, permitting oils, dust, etc., to penetrate these ducts easily and often, possibly, the openings between the epidermal cells and set up a dermatitis. McConnell advises as a prophylaxis in such persons the use of a lubricating oil for the skin, and it has proved to be of value.

2. McConnell, W. J.: Pub. Health Rep. 37: 1773 (July 21) 1922; 39: 979 (May 6) 1921.

The recognition of the importance of skin injuries for mercurial absorption also furnished the key to an observation that had hitherto been a mystery to us: Several years ago, while studying the absorption of calomel inunctions, we[3] observed a patient with a diffuse, rather superficial ulcerocrustaceous lesion of the entire abdomen. He quickly became salivated and showed severe symptoms of mercurialism. We were puzzled at the time to explain this phenomenon since the calomel inunctions, in practically all of our cases, were inert from the standpoint of mercurial or therapeutic effects. We now realize that the patient absorbed enough calomel through the diseased abdominal skin to get the systemic symptoms.

### CONCLUSIONS

1. The present series confirms our contention that mercurial inunctions are fully as efficient when the excess of ointment is removed with benzin, after thirty minutes of rubbing, as when the ointment is left on the skin.

2. By either method, about half of the patients require from eleven to nineteen rubs before salivation occurs; about a fourth require a smaller, and a fourth a larger number.

3. Pathologic conditions of the skin are important factors in the absorption of the inunctions.

3. Cole, H. N., and Littman, Sidney: A Clinical Study on the Use of Calomel Inunctions, J. A. M. A. 73: 1409-1413 (Nov. 8) 1919.

---

## ANTACIDS IN THE MEDICAL MANAGEMENT OF PEPTIC ULCER*

HOWARD F. SHATTUCK, M.D.
EDWARD L. ROHDENBURG, B.S.
AND
LELA E. BOOHER, M.Sc.
NEW YORK

Alkalis play a varying part in the different plans that have been advocated for the medical management of peptic ulcer. They are not used at all in some forms of treatment, while in other forms they are used in small quantities for short periods only. But it has remained for Sippy to work out a thorough, detailed method of using alkalis with ulcer-bearing patients, which is one of the most important parts of his form of treatment. He insists on the necessity of destroying the corrosive, disintegrating and digestive effect of the gastric juice, pointing out that it is best done by continuously neutralizing the free hydrochloric acid with alkalis; for the digestive properties of pepsin are lost in the absence of free acid. It is true that it is not yet known just what part the acidity of the gastric juice plays in the formation or the delayed healing of peptic ulcer. But it seems to be generally agreed that it is in some way responsible for the failure of these ulcers to heal as most other ulcers do elsewhere. Sippy's principles have been largely accepted, and his method of treatment widely adopted, being used more extensively, perhaps, than any other form of medical management.

In the beginning, Sippy used relatively large amounts of sodium bicarbonate, supplemented by bismuth and magnesium oxid, to neutralize the free hydrochloric acid. Later he reduced the sodium bicarbonate, and

* From the Departments of Medicine and Biochemistry of the Post-Graduate Hospital.
* Read before the Section on Medicine, Academy of Medicine, New York, Nov. 20, 1923.

began the use of calcium carbonate. These alkalis, sodium bicarbonate, calcium carbonate and magnesium oxid, are given in varying proportions hourly every day for many weeks. At times the equivalent of 30 grains (2 gm.) each of sodium bicarbonate and calcium carbonate are required hourly to neutralize the free hydrochloric acid, sometimes more. Given sixteen times, this would make a total of 32 gm. daily of each of these two alkalis. Bearing this in mind, one is not surprised that a few years ago, before the use of calcium carbonate, and when larger amounts of sodium bicarbonate were used, a few patients developed edema.

Hardt and Rivers[1] of the Mayo Clinic have recently reported a careful and interesting study of a group of patients showing toxic manifestations during the alkaline treatment for peptic ulcer according to the Sippy plan. They have given us the first description of the clinical picture these patients present. During the period of toxic manifestations, they found that the blood urea was often increased, in some cases the creatinin, and at times the carbon dioxid combining power of the plasma. The urine of some patients showed albumin or casts or red blood cells. At times the phenolsulphonephthalein excretion was reduced. They believed the nonmetallic ions to be the probable cause of the toxicity, and while they did not determine the hydrogen ion concentration of the blood, they thought that the increased carbon dioxid combining power of the plasma indicated that the term alkalosis might be justly applied to them.

The toxic symptoms most often noticed are headache, aversion to food, dry mouth, excessive thirst, lassitude, nausea and sometimes vomiting. With some patients these symptoms appear soon after beginning the alkalis, with others later on. At times they pass away in a few days even though the alkalis are continued in the same amounts, indicating, perhaps, that the organism in these cases makes some sort of a compensatory adjustment to them, either through freer elimination or by establishing some sort of tolerance to them. Again, the toxic symptoms become so pronounced and persistent that the alkalis have to be stopped for a few days, and sometimes the symptoms return as soon as the alkalis are resumed, so that they have to be abandoned at least in quantities sufficient to continuously neutralize the free hydrochloric acid. The following example well illustrates this:

CASE 1.—A woman, aged 45, who came under observation in December, 1921, gave a rather typical history of peptic ulcer of six years' duration. Physical examination was essentially negative. Roentgen-ray examination showed a definite duodenal lesion. She was put on the unmodified Sippy ulcer management in December, 1921. The equivalent of 15 grains (1 gm.) of calcium carbonate, 5 grains (0.3 gm.) of magnesium oxid and 10 grains (0.65 gm.) of sodium bicarbonate were required every hour to control the acidity. The ulcer symptoms and night retentions rapidly disappeared. A few days after beginning the treatment, however, the patient developed a moderately severe headache but no other toxic symptoms. No change was made in the alkali treatment, and the headaches stopped in a few days. Blood pressure and urinary findings remained normal. Six weeks later she complained of poor appetite, with constant lassitude and fatigue. These toxic symptoms were followed in turn by headache, excessive thirst and nausea. Alkalis were stopped and all toxic symptoms disappeared. Later, several attempts were made to resume the alkalis either in full or reduced amounts. In each instance the toxic symptoms returned, and in addition there was repeated vomiting. In April, 1922, finally all attempts to control the acidity with alkalis were stopped. Later the patient's ulcer symptoms disappeared entirely until January, 1923, when she again had a typical attack. Again she took alkalis but promptly developed toxic symptoms. A gastro-enterostomy was made soon after with satisfactory results.

Accumulating experience makes it clear that ulcer-bearing patients with damaged kidneys should be given alkalis with considerable caution. On the amounts usually required with the alkaline treatment, they seem to develop toxic symptoms easily, and to show definite signs of further reduced kidney function and renal damage in some instances. This is well shown by Case 2.

CASE 2.—A man, aged 60, came under observation in March, 1922. After having had typical ulcer symptoms for almost a year, a gastro-enterostomy was performed at the Mayo Clinic in 1911 with marked success. He remained free from symptoms for about ten years. Ulcer symptoms then returned, and a study of the case showed a duodenal lesion with marked gastric retention due either to the original ulcer or to a new one. The patient had also been having a systolic blood pressure of about 200 from time to time for a year before beginning the Sippy treatment, but with no other frank manifestation of renal disturbance. The urinary findings, chemical blood examination and phenolsulphonephthalein excretion were all normal except for a faint trace of albumin in the urine. He was put on the Sippy treatment in March, 1922. The ulcer symptoms rapidly disappeared, and the large evening gastric retentions were satisfactorily controlled with only an occasional return. The systolic blood pressure, which averaged about 150 at the beginning of the treatment, rose to 180 after two months. Alkalis equivalent to 25 grains (1.6 gm.) of sodium bicarbonate and 15 grains (1 gm.) of calcium carbonate were given every hour to control the acidity. All went well apparently until July, 1922, four months after the treatment was begun. The patient then began to show toxic symptoms, headache, dizziness, unsteady gait, lassitude, loss of appetite, and nausea. The systolic blood pressure had risen to 220, and there was slight edema of the ankles. Urine examination now showed albumin, hyaline casts, and red blood cells, and the two hour renal function test showed a moderate nocturnal polyuria, low specific gravity, and some inability to concentrate. Phenolsulphonephthalein excretion was 23 per cent. for two hours, and the chemical blood examination was normal. Alkalis were stopped, and a nephritic regimen was instituted. As a result, all toxic symptoms rapidly cleared up, the systolic blood pressure fell to 160, and the urinary findings improved, only a trace of albumin remaining. Following this experience, only occasional doses of alkalis have been used. For a time, an uncontrolled continuous gastric secretion with rather severe epigastric distress appeared. After a period of large retentions and repeated aspirations, when it was thought a secondary operation might be advisable, the patient's condition improved so much that surgery was indefinitely postponed. Since then the patient has been comparatively comfortable. It seems quite clear that the continued use of large amounts of alkali was responsible for the toxic symptoms and disturbed renal function that developed in this case.

It should be understood that toxic symptoms and impaired kidney function do not ordinarily follow the alkaline method of treating peptic ulcer. Patients showing them constitute only a comparatively small number of the total cases treated. But the previous discussion clearly indicates that for ulcer patients developing toxic symptoms and for all ulcer patients with renal disease, some other means of controlling the acidity of the gastric secretion is distinctly needed, to avoid the unfavorable results that may come from the use of the alkalis ordinarily used.

1. Hardt, L. L., and Rivers, A. B.: Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer, Arch. Int. Med. 31: 171 (Feb.) 1923.

About a year ago, we learned from Dr. Greenwald about the possibilities of the tertiary phosphates of calcium and magnesium for this purpose. Since then he [2] has pointed out that these salts act locally as gastric antacids but not as systemic alkalis, and are "excreted unchanged in the intestine and not in the urine." The magnesium salt is slightly laxative, the calcium salt slightly constipating, so a satisfactory combination is easy to establish, as a rule.

More recently, Kantor [3] showed the marked depressing effect of these salts on the free acid of the gastric juice, and reported effective results clinically in controlling the symptoms of gastric acidity calling for an antacid, including the symptoms of peptic ulcer.

TABLE 1.—*Neutralizing Power of Antacids and Alkalis*

| Salt | Mol. Weight | Grams Used | HCl Neutralized: C.c. of 0.5 N HCl | HCl Neutralized: Gm. HCl | Time Required for Neutralization in Minutes |
|---|---|---|---|---|---|
| Magnesium phosphate.... | 335.1 | 0.5 | 12.2 | 0.402 | 120 |
| Calcium phosphate..... | 310.3 | 0.5 | 2.9 | 0.104 | 15 |
| Sodium bicarbonate..... | 84.0 | 0.5 | 12.5 | 0.454 | 2 |
| Calcium carbonate..... | 100.0 | 0.5 | 21.5 | 0.782 | 20 |
| Magnesium oxid, heavy... | 40.3 | 0.5 | 45.6 | 0.829 | 135 |

Temperature, 25 C.; indicator, dimethylamino-azobenzene.

The approximate neutralizing power for hydrochloric acid of the different antacids and alkalis that are being used was kindly worked out by Dr. John A. Killian of the chemical laboratory at the Post-Graduate Hospital and is shown in Table 1.

It will be noticed that tertiary magnesium phosphate neutralizes approximately the same amount of hydrochloric acid as sodium bicarbonte, while tertiary calcium phosphate neutralizes only about one fourth as much hydrochloric acid as sodium bicarbonate. It is observed also that calcium phosphate completes its neutralization in about fifteen minutes, while magnesium phosphate takes about two hours. A combination of these two antacids, therefore, gives a relatively rapid neutralizing effect combined with a more slowly acting one, though it has less neutralizing power than the present commonly used combination of sodium bicarbonate, calcium carbonate and magnesium oxid.

Our experience with these antacid phosphates, however, has shown that they can be used successfully to neutralize the gastric free hydrochloric acid continuously. First we tried them with patients not having peptic ulcer, giving them every hour from 8 a. m. to 8 p. m. Several times a day, during the period of administration, small samples of gastric juice were aspirated with a duodenal tube and tested. In each instance the reaction of the aspirated contents remained acid, but in every case the free hydrochloric acid disappeared when sufficient phosphates were given. The phosphates were then tried in place of the alkalis with cases of peptic ulcer in which the Sippy treatment was being given. Here, again, in practically every instance the free hydrochloric acid could be controlled with sufficient amounts of the phosphates. The amounts required varied from the equivalent of about 10 grains (0.65 gm.) each of magnesium phosphate and calcium phosphate every hour, to 25 grains (1.6 gm.) of each every hour, the average being about 15 grains (1 gm.) of each every hour. In all cases the urine remained acid. Thus far, no toxic symptoms have appeared even when the phosphates were increased to 40 grains (2.6 gm.) of each every hour. Studies of the urine, blood pressure, and phenolsulphonephthalein excretion

TABLE 2.—*Effect of Ingestion of Tertiary Magnesium and Calcium Phosphate on Blood Analyses, Urinary Phosphorus, Blood Pressure, Phenolsulphonephthalein Excretion and Other Urinary Findings*

| | | | | Blood Analyses | | | | | | Urine Analyses | | | Tertiary Phosphate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case | Age | Sex* | Date | Inorganic P, Mg. in 100 C.c. | Urea N, Mg. in 100 C.c. | Chlorids as NaCl, per Cent. | $p_H$ | $CO_2$ C. P., Volume per Cent. | Blood Pressure, Mm. Hg | Qualitative Tests | Phthalein Output, per Cent. | Inorganic P, Gm. in 24 Hours | Gm. in 24 Hours |
| G. B. ..... | 48 | ♂ | 7/11/23 | 4.5 | .... | ..... | ..... | .... | ..... | ..... | .. | 1.20 | 0 |
| | | | 7/12/23 | 4.3 | .... | ..... | ..... | .... | ..... | ..... | .. | 1.40 | 26 |
| | | | 7/18/23 | 4.4 | .... | ..... | ..... | .... | ..... | ..... | .. | 1.05 | 0 |
| G. L. ..... | 18 | ♂ | 10/11/23 | 5.3 | 13.8 | 0.513 | 7.46 | 65.0 | 108/ 70 | Negative | 60 | .... | 0 |
| | | | 10/12/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 26 |
| | | | 10/13/23 | 4.9 | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 45 |
| | | | 10/14/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 34 |
| | | | 10/15/23 | 5.4 | 13.5 | 0.525 | 7.39 | 64.0 | 106/ 70 | Negative | 62 | 0.82 | 34 |
| | | | 10/16/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | 1.46 | 0 |
| | | | 10/19/23 | 4.7 | .... | ..... | ..... | .... | ..... | Negative | .. | .... | 0 |
| J. M. ..... | 53 | ♀ | 10/16/23 | 5.0 | 12.3 | 0.500 | 7.435 | 62.6 | 142/100 | Tr. prot. | 44 | 0.89 | 0 |
| | | | 10/17/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 34 |
| | | | 10/18/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 34 |
| | | | 10/19/23 | 5.2 | 11.3 | 0.500 | 7.395 | 58.8 | 130/ 90 | Tr. prot. | .. | 0.97 | 52 |
| | | | 10/20/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 42 |
| | | | 10/21/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 26 |
| | | | 10/22/23 | 4.4 | 10.2 | 0.560 | ..... | ..... | ..... | ..... | .. | .... | 0 |
| | | | 10/23/23 | 4.0 | .... | ..... | 7.405 | 60.0 | ..... | Tr. prot. | 40 | .... | 0 |
| | | | 10/26/23 | 4.9 | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 0 |
| J. A. ..... | 51 | ♂ | 10/26/23 | 4.3 | 16.1 | 0.500 | 7.43 | 62.5 | 122/ 84 | Negative | 56 | 1.20 | 0 |
| | | | 10/27/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 26 |
| | | | 10/28/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 52 |
| | | | 10/29/23 | 4.7 | 11.2 | 0.500 | 7.44 | 61.7 | 132/ 86 | Negative | 44 | 1.30 | 0 |
| | | | 10/30/23 | 3.9 | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 0 |
| E. L. ..... | 59 | ♀ | 10/31/23 | 4.0 | 14.0 | 0.500 | 7.44 | 63.5 | 138/ 80 | Negative | 48 | 0.80 | 0 |
| | | | 11/ 2/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 32 |
| | | | 11/ 3/23 | ... | .... | ..... | ..... | .... | ..... | ..... | 52 | .... | 64 |
| | | | 11/ 4/23 | ... | .... | ..... | ..... | .... | ..... | ..... | .. | .... | 64 |
| | | | 11/ 5/23 | 4.1 | 12.2 | 0.500 | 7.46 | 57.9 | 142/ 78 | Negative | .. | 0.81 | 0 |
| I. L. ..... | 28 | ♂ | 10/19/23 | 3.9 | 11.0 | ..... | 7.39 | 69.8 | 120/ 80 | Negative | .. | .... | 0 |
| | | | 10/20/23 | ... | .... | ..... | ..... | .... | ..... | Tr. prot. | 58 | 1.03 | 0 |
| | | | 10/23/23 | 3.9 | 10.7 | 0.563 | 7.455 | 67.2 | 128/ 78 | ..... | .. | .... | |
| | | | 10/26/23 | 4.8 | 10.9 | 0.500 | 7.43 | 67.2 | 116/ 70 | Tr. prot. | 64 | 1.80 | |
| | | | 11/ 1/23 | ... | .... | ..... | 7.45 | 67.6 | ..... | ..... | .. | .... | 32 daily |
| | | | 11/ 7/23 | 4.0 | .... | ..... | ..... | .... | ..... | ..... | .. | 1.88 | |
| | | | 11/10/23 | ... | .... | ..... | ..... | .... | ..... | Negative | .. | 1.88 | |
| | | | | | | | | | | ..... | .. | 1.62 | 0 |

* In this column, ♂ indicates male; ♀, female.

2. Greenwald, I.: Gastric Antacids Which Cannot Act as Systemic Alkalis, Proc. Soc. Exper. Biol. & Med. **20**: 436 (May) 1923.

3. Kantor, J. L.: Antacid Gastric Therapy, with Especial Reference to the Use of Neutral Antacids, J. A. M. A. **81**: 816 (Sept. 8) 1923.

have shown no abnormalities arising during the administration of phosphates (Table 2).

For the most part, the phosphates gave the same symptomatic relief as the alkalis to ulcer patients, although in some instances they did not. When they did not give complete relief, alkalis were given for short periods, and later on the phosphates were resumed with satisfactory results. Time alone will show whether the phosphates are as effective as the alkalis in promoting the healing of the ulcer. Our cases have not been treated long enough for us to make any statement, though thus far we have been favorably impressed by them. Perhaps it will develop, with greater experience, that the alkalis now commonly used should continue to be used in the usual case, the phosphates being reserved for those patients showing toxic symptoms, alkalosis, etc., with the alkalis, and for ulcer patients with damaged liver or kidneys.

To satisfy ourselves better that the tertiary phosphates in amounts sufficient continuously to neutralize the free hydrochloric acid have no unfavorable effects on the organism, chemical blood and urine studies were made on several patients while they were receiving phosphates. Neither the blood urea nor the blood chlorids were increased by the ingestion of phosphates (Table 2). This is in striking contrast to the increased blood urea that Hardt and Rivers found in some of their cases in which alkalis were being given. The acid-base balance of the blood was not significantly or harmfully affected, as shown by determinations of the hydrogen ion concentration or the carbon dioxid combining power of the plasma. The inorganic phosphorus of the blood was not increased even after the administration of large amounts of the phosphates. This fact, together with the confirmation in the main, of Greenwald's finding that the urinary phosphorus is not increased after the ingestion of considerable quantities of tertiary phosphates, would go to show that they are not absorbed in any quantity into the blood or excreted in the urine, but pass with very little absorption through the gastro-intestinal tract. Accordingly, their use as antacids in peptic ulcer would appear to be quite harmless, and to afford an excellent substitute for the alkalis when the latter are contraindicated.

### SUMMARY

1. Some patients receiving the alkaline treatment for peptic ulcer develop toxic symptoms and may show evidence of impaired renal function, as a result of the alkalis administered. Especially is this true of patients having damaged liver or kidneys.

2. Tertiary calcium phosphate and tertiary magnesium phosphate have been shown to act as local antacids and not as systemic alkalis.

3. These tertiary phosphates have been used successfully to neutralize continuously the free hydrochloric acid of patients receiving the Sippy ulcer management without the appearance of toxic symptoms or evidence of renal injury.

4. Chemical analyses of the blood and urine of patients receiving tertiary phosphates in amounts sufficient to neutralize the free hydrochloric acid failed to show any significant changes pointing to absorption of the phosphates into the blood.

771 Madison Avenue.

**Argentine Students in Paris.**—Funds have been collected in Argentina for the purpose of founding a home at Paris for students from Argentina. More than 1,500,000 francs are already available.

## ACUTE PANCREATITIS WITH FAT NECROSIS, COMPLICATED BY DIABETIC COMA *

JUAN RODRIGUEZ, M.D.
FORT WAYNE, IND.

Acute pancreatitis is one of the most fulminating abdominal diseases with which we have to deal. It is one that demands diagnostic acumen, and, with very few exceptions, surgery is the treatment of choice. The most characteristic symptoms are severe, persistent pain in the midepigastrium just above the umbilicus, vomiting and shock. No time must be lost in opening the abdomen, as a fatal outcome will supervene in a few hours if this is not done.

The exception for not opening the abdomen in these cases is when diabetic coma complicates the pancreatitis. This is rare, but is occasionally encountered, as demonstrated by the following case report. Incidentally, the case illustrates the value of insulin in the treatment of diabetic coma.

### REPORT OF CASE

*History.*—Mrs. C. H., aged 59, was admitted to the hospital in a semicomatose state. Her family history was not significant. For many years, possibly five, she had had a good deal of dyspepsia, i. e., distention and a few colicky pains in the right hypochondrium not severe enough to require opiates. Six weeks before admission she had a superficial infection of the right leg on the site of an old fracture. Three days before admission she was taken suddenly ill with a severe abdominal pain in the epigastrium accompanied by persistent vomiting for thirty-six hours, which necessitated the administration of 1 grain (0.065 gm.) of morphin. There was an interval of a few hours in which the vomiting and pain ceased, with recurrence after this. There were no chills and no jaundice. Six weeks before, at the time of the leg infection, the urine was free of sugar.

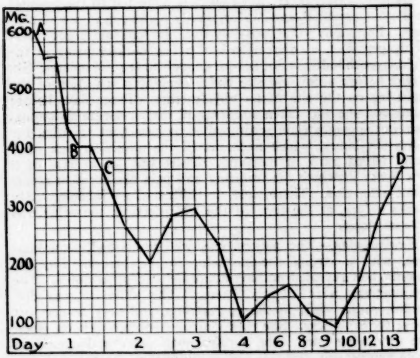
*Examination.*—The patient was well nourished, semicomatose, with a strong acetone odor to the breath. Physical examination revealed nothing abnormal except as noted. The conjunctivae were slightly icteric. The abdomen was distended, rather rigid in the epigastrium, and very tender just above the umbilicus. She was conscious enough to know when she was being hurt. The surgical staff made a diagnosis of acute pancreatitis probably following an old chronic cholecystitis, and advised immediate operation. A blood count showed 10,500 leukocytes with 80 per cent. of polymorphonuclears.

*Treatment and Course.*—The patient was prepared for an abdominal section, and a catheterized specimen of urine was obtained for examination which revealed the presence of a large amount of sugar, acetone and diacetic acid. At this time it was thought best to postpone the operation and treat the impending diabetic coma. She was given 20 units of insulin, and a blood sugar determination was taken immediately afterward before the insulin had had time to produce any effects. This was found to be more than 600 mg. per hundred cubic centimeters of blood. The insulin treatment was kept up every hour for six hours, supplemented by orange juice by mouth and alkalis by rectum. At the end of the fifth hour the blood sugar had come down to 360 mg. per hundred cubic centimeters of blood, and she was rational. She had received at this time 140 units of insulin. The urine still contained some sugar and a trace of acetone and diacetic acid. She was brighter than on admission, but looked acutely ill. The abdomen was tender and the vomiting persisted. She did not complain, however, of pain. The insulin was continued after this every six hours for two days, and then decreased to 12 units twice a day, with the result that on the sixth day of admission the urine was entirely free of sugar and ketone bodies. The blood sugar was 106 mg. On the seventh day of admission she was allowed a diet containing 35 gm. of carbo-

* From the service of Dr. H. A. Duemling, Lutheran Hospital.

hydrate and a total of 1,900 calories. Emesis had continued, but was not so pronounced, and the abdominal tenderness was diminishing. All this time she was having a low grade temperature, never over 100.6. On the twelfth day of admission sugar again appeared in the urine and she had a hyperglycemia of 280 mg. Insulin, which had been discontinued on the ninth day because the blood sugar was in the danger line, 86 mg., was again administered, 20 units twice a day one-half hour before breakfast and supper. On the morning of the thirteenth day while the nurse was giving her an enema, she became suddenly pulseless and unconscious. Her breathing was stertorous and acetone was easily detected. The blood sugar at this time was 360 mg. She died in half an hour. The necropsy findings present the rest of the picture.

*Necropsy.*—This was held two hours after death and before embalming, and was confined to the abdomen. There were on the omental fat a large number of whitish-yellow areas of fat necrosis, varying in size from a split pea to a dime. The omentum was adherent to the pelvis. After separation of the omentum from its adhesions, a large quantity of opalescent, blood-stained fluid filled the abdomen. The mesenteric fat showed the areas of fat necrosis described above. The gallbladder was small and shrunken, and contained two large stones, each about the size of a hickory nut, and several small stones. The bile was dirty brown, with purulent flakes in it. No stones were palpated in the common duct. The pancreas




Blood sugar (milligrams per hundred cubic centimeters of blood) in case of diabetic coma complicating acute pancreatitis: *A*, from here on, blood sugar determinations were made every hour; *B*, patient became rational; *C*, from here on, blood sugar was taken at first three times a day and finally twice a day; some days the procedure was omitted, as the patient objected to the punctures; *D*, one-half hour before death.

was soft, mushy and edematous, and was torn easily by the dissecting finger. The same areas of fat necrosis were found on the surface of the pancreas, only more abundant and coalescent. Pus could be expressed from these necrotic areas in the pancreas.

### COMMENT

This case clearly illustrates the value of insulin in diabetic coma. We realized all the time that there was a surgical condition of the abdomen, but if the patient had been operated on she would surely have died sooner. If such a slight trauma as giving her an enema was enough to throw her into coma when her blood sugar was around 300 mg., what would a surgical operation under an anesthetic have done when the blood sugar was over 600 mg.? Insulin kept her alive for a few days, but it was beyond its power to restore the other pancreatic functions.

The accompanying chart shows the blood sugar curve.

2927 Hoagland Avenue.

## THE USE OF CONVALESCENT SERUM IN THE PROPHYLAXIS OF MEASLES *

GEORGE H. WEAVER, M.D.
AND
T. T. CROOKS, M.D.
CHICAGO

Measles is so universal that many people consider it a trivial disease. Ker [1] states that of 14,000 persons, 97.3 per cent. of those over 15 years of age had had the disease. As a cause of death in children it ranks third from the highest among the acute contagious diseases. In the registration area of the United States [2] in 1920 there were 7,712 deaths from measles—a rate of 8.8 per hundred thousand. Of these, 78 per cent. were of children under 5 years of age. In Chicago from 1917 to 1921 there were 718 deaths from measles, 90.6 per cent. of which were in children under 5 years of age. Under exceptional circumstances, measles may become a serious disease for young adults. Those familiar with the epidemics in our army camps during the World War recall the heavy mortality from measles and pneumonia. But under ordinary conditions young children furnish the greatest number of cases and the highest mortality. It is particularly fatal in foundling institutions, one Paris orphanage reporting a mortality of 46.22 per cent. in a five-year period covering 1,575 cases.[3] Many American hospitals having a large children's department are troubled with outbreaks of measles each spring.

The Durand Hospital series,[4] though small, gives a good picture of mortality rates with age and complications. In 396 cases of measles during ten years there were eighteen deaths, or a rate of 4.5 per cent. Bronchopneumonia was the fatal complication in sixteen of these, and associated diphtheria in the other two. There was only one death among children over 5 years of age, this occurring in a boy, aged 7 years, who had a complicating neglected diphtheria.

Some method of protection against measles is needed, especially for children under 5 years of age, since, if the disease could be avoided until later in childhood, the mortality would be much reduced. The use of serum taken from patients convalescent from measles gives promise of such protection. In 1916, Nicolle and Conseil [5] first successfully protected by this means one child in a family of four in Tunis, and reported the case in 1918. Later, in 1921 they [6] again published results of success in two more cases. In 1918, Richardson and Connor [7] in Providence, R. I., protected seventeen children by the use of convalescent serum. In 1920, Degkwitz [8] in Munich published an account of 172 successful immunizations. Torres and Pacheco [9] in Buenos Aires gave serum to five children, only one of whom devel-

* From the Durand Hospital of the John McCormick Institute for Infectious Diseases.

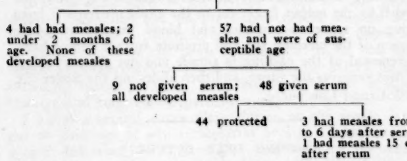
1. Ker, C. B.: Infectious Diseases, Ed. 2, London, Oxford University Press, 1920, p. 33.
2. Report of U. S. Census Bureau, 1920.
3. Ker, C. B.: Infectious Diseases, p. 59.
4. Weaver, G. H.: Ten-Year Report, Durand Hospital of the John McCormick Institute for Infectious Diseases, 1923.
5. Nicolle, C., and Conseil, E.: Bull. et mém. Soc. méd. d. hôp. de Paris **42**: 336, 1918.
6. Nicolle, C., and Conseil, E.: Arch. d. Inst. Pasteur de l'Afrique du Nord **1**: 193, 1921.
7. Richardson, D. L., and Connor, Hilary: Immunization Against Measles, J. A. M. A. **72**: 1046 (April 12) 1919.
8. Degkwitz, R.: Ztschr. f. Kinderh. **27**: 171, 1920.
9. Torres, M., and Pacheco, G.: Arch. Latino-Am. de Pediatria **14**: 305, 1920.

oped measles. In 1921, Manchot and Reiche [10] reported 155 injections with eleven failures. Of the 261 children in Budapest who received serum in von Torday's [11] series, fifteen developed measles. In Italy, Maggiore [12] reported several hundred protections. In 1922, McNeal,[13] at Rochester, Minn., gave serum to sixteen children, four of whom developed measles. In 1923, De Jong and Bernard [14] reported sixteen injections with convalescent serum, with one failure. Von Torday,[15] summarizing the reported cases, found that convalescent serum had been used in about 2,000 cases and that it had failed to protect in less than 3 per cent., and added that in these failures the technic was probably at fault.

At the Durand Hospital during the spring and summer of 1923, measles convalescent serum was collected for trial as a prophylactic measure. Exposed children who had not had measles were given serum in the wards of Durand Hospital. Serum was also furnished for use in the Presbyterian Hospital, the Chicago Home for the Friendless, Michael Reese Hospital, and also for a few private cases. In all, sixty-three children were observed. Of these, four had had measles and two were under 2 months old; these were not given serum and did not develop measles. There were fifty-seven susceptible children; nine of these were not given serum, and they all developed measles from twelve to fifteen days after exposure. Forty-eight were given serum; forty-four did not develop measles, although they were kept with the others and were similarly exposed. Four of those given serum developed measles. In three of these the rash appeared from one to six days after the serum injection. In one the rash came out fifteen days after the administration of the serum on the day of exposure.

The accompanying tabulation points out several interesting facts.

*63 Children Exposed to Measles*


4 had had measles; 2 under 2 months of age. None of these developed measles
57 had not had measles and were of susceptible age
9 not given serum; all developed measles
48 given serum
44 protected
3 had measles from 1 to 6 days after serum; 1 had measles 15 days after serum

1. Children who have had measles, and babies during the first few months of life, do not readily contract measles. Six such children were equally exposed with the others and did not contract the disease.

2. The nine children not given serum, all of whom developed measles, serve as positive controls.

3. Of the four who developed measles after serum, three were given the serum too late. It appears that the serum must be given during the first week after exposure to be effective.

4. One child developed measles in the regular period of incubation with no apparent modification by the use of serum which was given on the day of exposure. This child was in a private room and not as directly exposed as most of the other cases, yet it was the only one in forty-five cases in which the serum given at the proper time failed to protect.

The method of collection and administration of the serum is essentially that of Degkwitz.[16] Blood is taken aseptically into a sterile flask or bottle from an arm vein of older children and adults convalescing from measles about five days after temperature has become normal. From 8 to 10 ounces of blood is withdrawn, depending on the size of the patient. This is allowed to coagulate, and when the clot has separated, the clear serum is pipetted off, usually the next day. Each lot of serum is tested for sterility by both aerobic and anaerobic cultures, and a Wassermann test is made. If urgently needed, the serum of one patient is used for protective injections. But if there is plenty of serum on hand, the serums from several patients are mixed, and this pooled lot is then distributed into small bottles and kept in the icebox until needed. After each handling of the serum, cultures are made, and a final culture from the first and last bottles of each lot is made before storing in 5 c.c. containers with paraffin-sealed corks. No preservative has been added, as most of this serum is used within a short time. If it is to be kept for any length of time, 0.25 per cent. tricresol could be added as is done with other serums. This serum is given with a hypodermic syringe deep into the thigh muscles in doses of from 5 to 10 c.c., depending on the age of the patient and the time since exposure. In some cases in which there was intimate and continued exposure, a second dose a week or ten days later has been given, but the single early dose usually protects.

In two cases, doses of 35 and 40 c.c. of the serum were given on the first day of the measles eruption in the hope of modifying the infection. The course of the disease did not appear to be altered by these injections.

The main use of the serum seems to be limited to prophylaxis against measles when given within the first week of exposure. This protection is apparently a passive immunity, and its duration is limited. McNeal [13] reports a case of measles in a child two months after the serum protection, and von Torday [17] three cases from seventy-two to seventy-five days after serum. Apparently two months is the limit of immunity.

The use of convalescent serum is further limited by the supply of serum. It is not always possible to have an older patient conveniently at hand for securing blood. While the serum apparently remains potent for several months, its usefulness would be considerably enhanced if a supply from other than a human source were available.

Blood or serum from an adult who has had measles in early life has also been used with some success. Von Torday [18] reports 116 such injections, with failure to protect in twelve cases. Degkwitz [8] also has used this method. While the protection afforded does not appear to be as great as that from serum taken during the stage of convalescence, this method might be advantageously used by practitioners if no other serum was available.

An active immunization against measles which would be permanent and universally available is much more to be desired. Herrman,[19] in 1915, reported the successful protection of forty infants by swabbing the nasal mucosa with mucus taken from the noses of other

10. Manchot, C., and Reiche, F.: Med. Klin. **17**: 1230 (Oct. 9) 1921.
11. Von Torday, F.: Ztschr. f. Kinderh. **29**: 148 (June) 1921.
12. Maggiore, S.: Pediatria **29**: 873 (Oct. 1) 1921.
13. McNeal, M. D.: The Serum Prophylaxis of Measles, J. A. M. A. **78**: 340 (Feb. 4) 1922.
14. De Jong, S. I., and Bernard, E.: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 500, 1923.
15. Von Torday, F.: Jahrb. f. Kinderh. **102**: 213, 1923.
16. Degkwitz, R.: Ztschr. f. Kinderh. **25**: 134 (May) 1920.
17. Von Torday, F.: Jahrb. f. Kinderh. **29**: 148, 1921.
18. Von Torday, F.: Jahrb. f. Kinderh. **102**: 213, 1923.
19. Herrman, C.: Arch. Pediat. **32**: 503, 1915.

children one day before the measles eruption appeared. In 1923, he [20] listed a total of 165 such protections; but, so far as can be found, no one else has used this method. As McNeal has suggested, there appears to be a danger either of transmitting a virulent case of measles or of carrying over some other infection. Although Herrman has used it quite frequently with no reported deleterious effects, the method has not commended itself to general use.

Tunnicliff and Moody,[21] by the use of a green diplococcus isolated from early cases of measles, have induced an immunity in rabbits to reinfection with measles virus, but have not attempted this work on human beings. Although Degkwitz [22] reports the successful cultivation of the measles virus, he has not as yet given any definite account of his work. French investigators [23] advocate the use of the convalescent serum from about the seventh to the tenth day of incubation, so that the patient gets a mild form of measles which thus gives him a permanent immunity less the dangers of the ordinary nonattenuated infection.

Hiraishi and Okamoto,[24] in Tokyo, have attempted to induce a permanent immunity by injecting diluted blood from a measles patient into a child who has not had measles. They hope, by increasing the dose, to protect against the natural infection.

Some of these methods give promise of good results; but, as yet, none of them seem as sure as the passive immunity by the use of convalescent serum.

In Germany,[25] it has been suggested that health departments take steps for the collection of serum from all convalescent adults and older children, and preserve it for distribution where needed for the protection of children under 5 years of age. A similar plan could be worked out in a city like Chicago, if each hospital were used as a center. Most practitioners are associated with some hospital group. If each physician having under his care a measles patient over 10 years old would send the patient to the hospital laboratory for the drawing of blood five days after the temperature had become normal, there could soon be collected a considerable amount of convalescent serum. This could be distributed to the attending men of the hospital for use as needed. It is felt that the cooperation of the general practitioner in this way could be of great value in reducing the measles morbidity in young children, and this in turn would undoubtedly cut down the mortality rate, especially in children under 5 years of age.

629 South Wood Street.

20. Herrman, C.: New York State J. Med. **23**: 93, 1923.
21. Tunnicliff, Ruth, and Moody, W. B.: J. Infect. Dis. **31**: 382 (Oct.) 1922.
22. Degkwitz, R.: Deutsch. med. Wchnschr. **48**: 26 (Jan. 5) 1922.
23. Measles as Modified by Preventive Injections of Convalescents' Serum, Paris Letter, J. A. M. A. **80**: 709 (March 10) 1923.
24. Hiraishi, S., and Okamoto, K.: Japan M. World **1**: 10 (Oct.) 1921.
25. Klin. Wchnschr. **2**: 1532, 1923.

**Gastric Germicidal Barrier.**—Experimental results appear definitely to be in accord with the opinions that clinical conditions arising from intestinal infection with pathogenic organisms and absorption of their toxins may frequently arise from deficiency, temporary or permanent, of free hydrochloric acid in the gastric secretion. If, to remedy this deficiency, hydrochloric acid be given by the mouth, it should be administered alone and not mixed with proteins, such as those of milk, which immediately remove some or all of its germicidal power. Organic acids, such as citric acid, would appear to be incapable of making good the loss of germicidal power when the gastric juice is deficient in hydrochloric acid. —F. A. Knott: *Guy's Hosp. Rep.* **73**:436 (Oct.) 1923.

## *Clinical Notes, Suggestions, and New Instruments*

### AN EXPEDIENT TO CONTROL EPISTAXIS

JOSEPH G. LEVINE, M.D., NEW YORK

Nasal hemorrhage, in most instances, is usually controlled without great effort if the bleeding is not marked. On the contrary, violent bleeding or a steady, consistent ooze sometimes taxes the resources of the physician and persists in spite of the use of all available remedies.

A nasal hemorrhage is the most common form of bleeding in the human body. In the majority of cases, bleeding is confined to a comparatively limited area on the anterior portion of the cartilaginous septum. This region is known as Kiesselbach's area. It bleeds very easily both from local and from general causes, because of the distribution of its vessels. A thin plate of cartilage is covered on each side by mucous membrane. It is important that it receives an abundant blood supply. As the arteries are in the mucous membrane, they are superficial and liable to injury, and cannot retract into deeper tissue after rupture, whether this is due to a blow, an erosion or a constitutional disease, as hypertension.

The bleeding must be controlled by suitable packing, which should make an even and firm pressure against the bleeding site and not become saturated with blood to render the site infective and the gauze soggy and infirm.

I have found this to be accomplished by the use of an ordinary rubber finger-cot about the size of the index finger or smaller. Its exterior is covered with a bland lubricating jelly to make the insertion and removal easy; then it is grasped with the nasal forceps and inserted into the bleeding nasal cavity, the blind pouch end foremost, as far as it will go, with the open end just protruding from the nasal orifice. A one-half inch strip of plain gauze is then packed into the rubber encasement as firmly as possible with the nasal forceps, while the finger-cot is held from sliding in.

The bleeding is effectively controlled, because the gauze packing cannot become blood soaked and loosen, while the elasticity of the distended finger-cot distributes the force of pressure evenly in all directions. It is not necessary to remove this packing within twenty-four hours, because the protection afforded by the rubber finger-cot to the gauze prevents it from soaking up sapremic exudates and blood that often induce infection of the bleeding site and promote further hemorrhage. The removal of the packing is simple and not discomforting. One first removes the gauze, and then slides out the finger-cot.

2185 Grand Concourse.

### REMOVING DEEP SUTURES *

FREDERICK L. SMITH, M.D., ROCHESTER, MINN.

The removal of deep retention sutures is a painful ordeal; "worse than the operation" is a common expression of patients on whom laparotomy has been performed.

The deep silkworm sutures that are used in the Mayo Clinic are placed as supportive retention sutures, and are usually removed on the fourteenth day following operation. Frequently the suture adheres to the tissues and requires considerable traction in removal, with consequent pain. Occasionally the suture breaks, leaving the last half in the tissues; this not only causes the patient great discomfort and concern, but is a source of anxiety to the surgeon, who does not know whether it will fibrose, or whether it will cause a suppurative process later. In order to avoid such a sequel I instruct the patient to execute deep abdominal breathing, and then by gentle traction, remove the suture on inspiratory and occasionally on expiratory movement of the abdominal wall. If the suture does not loosen on slight traction, the patient is instructed to take several deep breaths, which in turn distend and retract the abdominal wall, thereby loosening the fibrous adhesions to the ligature, and in nearly every case, the suture will be released.

* From the Section on Surgical Dressings, Mayo Clinic.

This procedure does away with the so-called locked suture, which is a misnomer in most instances, since the suture is bound (locked) by granular attachments of connective tissue elements. Cutting the sutures one day and removing them at the next dressing is good practice. A suture will sometimes adhere to such an extent that several attempts at the first or second dressing will not dislodge it. In such cases, I instruct the patient to practice abdominal breathing during the interval between dressings. I never fail to remove the suture painlessly at the second or third subsequent visit.

## THE PROPHYLACTIC USE OF ARSPHENAMIN

ADOLPH ROSTENBERG, M.D., NEW YORK

Ordinarily, when we speak of prophylactic measures against a syphilitic infection, we mean the application of a 10 per cent. calomel ointment or similar chemical agents that have proved to be very efficacious, but only when employed within about eight hours after cohabitation.

According to investigations by Brown and Pearce at the Rockefeller Institute, who have studied the dissemination of spirochetes in rabbits, it has been shown that these were present in regional lymph nodes in less than forty-eight hours after their inoculation. This fact would tend to show that the use of external prophylactic agents, even when used within a few hours, might be too late to prevent a general infection, which has been known to have occurred in spite of the use of these prophylactics in quite a number of instances.

Michel and Goodman[1] advocate the use of arsphenamin in cases in which one of the persons concerned has had intercourse with a frankly syphilitic partner. They have tried this method in a number of cases, giving from four to six arsphenamin injections, according to the time since exposure; the single dose was not more than 0.3 gm., and the interval was from two to five days. In none of these cases did the exposed person develop any symptoms of syphilis.

American literature, strange as it seems, does not contain any other publications on this subject. There are, however, a number of cases reported by French and German authors, which reports are reviewed in the article by Michel and Goodman.

I have employed this method with gratifying results.

J. D., a man, aged 44, an Italian, father of four healthy children, who had had no previous venereal disease, about two weeks after an illicit intercourse noticed the appearance of an ulceration on the penis. In spite of it, he had intercourse at three different times with his wife before he consulted his family physician, who diagnosed the case as a hard chancre and referred the patient to me.

I found a typical, large ulcus durum on the penile sulcus, but no evidence of any secondaries or sign of any previous specific infection. The ulcus was examined for spirochetes, which were found in great abundance. The blood Wassermann reaction was negative. The patient told me that he had exposed his wife on several occasions without using any protection, and was very anxious, when I told him what the consequences might be. As the interval since the first intercourse was only about a week, negative findings in his wife would not have proved anything. I therefore proposed prophylactic arsphenamin injections, and gave her four neoarsphenamin injections, of 0.45 gm. each at four day intervals. I kept her under continuous observation as to clinical symptoms, and took several Wassermann tests, the last about four months after the treatment. She remained well, and the Wassermann reactions were negative.

This case proves conclusively that the woman escaped a syphilitic infection. There is, of course, no way of proving that she would have become infected had she not received the prophylactic treatment; but, judging from our general experience as to the great infectiousness of an ulcus durum with an ulcerated surface, abundant with spirochetes, we must admit that the chances of escape would have been very small.

152 East One Hundred and Seventy-Ninth Street.

1. Michel, L. L., and Goodman, Herman: Prophylaxis of Syphilis with Arsphenamin, J. A. M. A. 75: 1768 (Dec. 25) 1920.

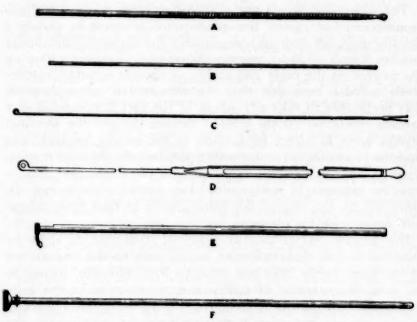
## GASTROSCOPY: A NEW METHOD FOR INTRODUCTION OF THE GASTROSCOPE

GORDON F. HELSLEY, M.D., SAN FRANCISCO

That it is possible to introduce a straight tube from the mouth into the stomach is well known, and numerous workers have sought to utilize this fact to secure a visual examination of the interior of the stomach. Ingenious instruments have been devised for this purpose, notably the gastroscope of Elsner and its modification by Schindler.[1] While not all the problems have been solved, endoscopic examination of the stomach gives information of great value and conceivably may come to occupy the same position in gastro-enterology that cystoscopy holds in urology.

In the hands of such a one as Schindler, who is doing gastroscopies daily, the introduction of his instrument is expeditiously performed without serious inconvenience to the patient. However, I noted in Schindler's clinic that the passage through the hiatus esophageus of the diaphragm, where the axis of the esophagus turns sharply to the left, was usually accomplished against marked resistance. In order to avoid the possibility of causing a lesion in this region, I have modified Schindler's technic of introduction.

With the stomach empty and the patient sitting upright, a flexible metal tube is passed down the esophagus until the tip lies well within the cardiac end of the stomach. This tube is a modified Rosenheim sound. Its diameter is No. 25 French, there is no bulbous enlargement at the upper end, and two




*A*, modified Rosenheim sound; *B*, straightening rod; *C*, elongating rod; *D*, instruments assembled, with straightening rod inside Rosenheim sound; *E*, outer tube of gastroscope; *F*, optic of gastroscope.

holes are drilled near the upper end for attachment of an elongating rod. The surface of this tube is very smooth and it is exceedingly flexible. With the tube in position, the patient reclines on his left side in the position described by Schindler, and a light steel rod is inserted into the tube and pushed all the way down to the tip, thereby straightening out the flexible tube. Next an elongating rod, 67 cm. in length, is attached by spring prongs into the holes at the upper end of the tube. Over this the outer tube of the gastroscope is passed and on down over the flexible tube into the stomach. The outer tube fits closely around the flexible tube; and, since the latter has been brought into a straight line, the introduction of the outer or gastroscopic tube is accomplished with the utmost ease. The flexible tube is now withdrawn and the optic inserted in its place.

My experience with this method indicates that it is the easiest and safest way to introduce the gastroscope. In some cases a gastroscope cannot be passed, and in such cases, because of deformity of the spine or some other anomaly, trouble is indicated by unusual resistance when passing the inner straightening rod. Since in normal cases this is accomplished with a minimum of pressure, any variation is easily detected.

1. Schindler: Gastroscopie, Munich, Lehmann, 1923.

A considerable number of patients have been examined by this method, and it has fully justified itself as an easy method for examining possible cases as well as a means to eliminate the rare impossible case. Gastroscopy is in the highest degree a specialist's method, and it will probably remain such. A dependable valuation of the visible abnormalities of the interior of the stomach can be gained only by one who is examining all sorts of stomachs frequently. As far as technic of introduction goes, however, I believe that my method has made it simple and safe.

291 Geary Street.

## COMPARATIVE EFFECTS OF DEEP ROENTGEN-RAY THERAPY AT LOW AND VERY HIGH VOLTAGE

A PRELIMINARY REPORT *

JAMES T. CASE, M.D., BATTLE CREEK, MICH.

For some time, roentgenotherapists have been confronted with the problem of the time factor in the application of roentgen rays for therapeutic purposes. Some have preferred to divide the total dose contemplated into a number of sittings, so that the entire amount of the radiation administered, say in a case of uterine carcinoma, would be spread over from ten to fourteen days. This is the view that has been advanced by Regaud and others of the French radiologists. Others, on the contrary, have advocated the introduction of the radiation with the greatest intensity in the shortest possible time, so that only two or three days suffice for such a patient.

The foregoing is *not* the problem referred to in this communication, but rather the question of whether in giving a definite dose, 400 milliampere-minutes for instance, one should employ 2 or 5 or 25 or more milliamperes of current, keeping the patient on the table 200, eighty or sixteen minutes, respectively. Some have felt that the slower rate of application was preferable to take advantage of the fact that mitosis is a process going on all the while. Others thought the physical results were in direct proportion to the energy applied, and that the physiologic results would parallel the physical results, without reference to the time factor. We know that this is true, for instance, in epilation of hairy parts for ringworm. In other words, the physiologic effects seem to take their course *pari passu* with the physical.

But actual trial of the two types of treatment, to show by experiment and observation of actual patients the importance of the time factor, has not hitherto been possible, owing to the lack of apparatus of sufficient capacity to make the tests necessary. Up to the present the roentgen-ray deep therapy in use affords not over 6 milliamperes for continuous use from one tube at from 200,000 to 220,000 volts delivered at the tube, requiring therefore for the application of 600 milliampere-minutes the very tedious and (for the patient) very uncomfortable expenditure of 100 minutes. There are at least 350 deep therapy installations in the United States and Canada today, and many of these are by their markers restricted to the use of 4 milliamperes of current through the tube.

Recently Dr. W. D. Coolidge of Schenectady, N. Y., has perfected the invention of a new therapy roentgen-ray tube, especially cooled by a circulating water system, applicable to either superficial or deep roentgenotherapeutic work, which is standardized as being able to withstand the *continuous output of up to 50 milliamperes at 250,000 volts*, an intensity of radiation hitherto scarcely dreamed of.

Through the courtesy of Dr. Coolidge, last summer there was installed in the radiotherapy department of the Battle Creek Sanitarium the first one of these new tubes, and with the assistance of my colleagues, Drs. Franklin Johnson and Frances Turley, and with many helpful suggestions from C. Darnell, E.E., a large series of animal experiments have been completed, and since the first of August, 1923, all our clinical material requiring roentgentherapy has been handled with the new tube at high milliampere and voltage readings. Applications formerly requiring from three to four hours may now be concluded within from fifteen to eighteen minutes, and the average dose actually desirable in any one day needs only five to ten minutes. Although Dr. Coolidge has declared that the new invention permits the employment of 50 milliamperes, we have not yet gone beyond 30 milliamperes, and our routine work has been done with between 25 and 30 milliamperes, at 200,000 to 210,000 on the tube, for the last six months.

Fortunately, the new tube also permits the use of as low a current intensity as 1 milliampere at the same high voltage. We were thus permitted to carry out a series of comparative observations to determine, if possible, an answer to the problem: Given a fixed dose of, say, 450 milliampere-minutes, is there any difference in the clinical effect if the application is made at the rate of 2.5 milliamperes per minute or at the rate of 25 milliamperes per minute?

We could have made the difference in the time ratio as high as 60 to 1, but we actually did our experiments with a difference in the time ratio of 10 to 1 for the most part, though latterly with a time ratio difference of 25 to 1. We reasoned that if a difference really existed, it would be at least indicated with the ratio of application of 10 to 1, especially as the work was made to conform to a rather extensive series of experiments and observations simultaneously carried on relative to the toxicity resulting from irradiation.

In accordance with our experimental studies as well as our observations on all our patients subjected to roentgenotherapy since Aug. 1, 1923, we may say without hesitation that the experiments and experiences show clearly that within the limits of our observaion, that is, with a difference in the time ratio as great as 10 to 1, the physiologic and clinical effects are directly related to the amount of energy applied, regardless of the time factor.

It is evident to us that we may take advantage of the tremendous increase in efficiency of the new water-cooled Coolidge tube, shortening greatly the time of application of any desired dose, with gratification to both patient and physician, and without prejudicing the results to be expected in the light of the mass of data already published based on the much slower rate per minute of application. We have been especially happy to note a diminution in the frequence and severity of postirradiation sickness, which is now seldom observed in our practice, although we have not cut down the total amount of irradiation administered at one sitting.

* From the Department of Surgery of the Battle Creek Sanitarium.

## SEVERE EDEMATOUS CONJUNCTIVITIS FROM POWDERED ORRIS ROOT

DUNBAR ROY, A.B., M.D., ATLANTA, GA.

During a long period of years including both private and dispensary practice, I never encountered a case similar to the one here reported. Nor have I been able to find in textbooks or monographs any reference to powdered orris root as a cause of ocular inflammation.

### REPORT OF CASE

Mrs. T. J. B., aged 32, who consulted me, July 22, 1923, had been giving her hair a dry shampoo with orris root, when some of the powder accidentally fell into the right eye, without any immediate irritation. The next morning the lids of this eye were considerably swollen, and a membrane was sticking out from the eyeball itself. There was no pain or secretion.

Both lids, especially the upper lid, were white and edematous. On attempting to open the palpebral fissure I found an edematous, chemotic condition involving the bulbar conjunctiva, so much so that the latter almost protruded through the fissure. It resembled more the chemotic appearance of the bulbar conjunctiva seen after the instillation of a strong solution of ethylmorphin hydrochlorid. There was no pain, but a stiff, uncomfortable sensation. There was no secretion and no interference with vision. Under ice packs and mild boric acid solution, all symptoms disappeared in three days without apparently any damage to the eye.

### COMMENT

I understand that the dry shampooing of the hair with powdered orris root is practiced in "beauty parlors" and frequently in the home boudoir, and for this reason the case is reported. The powder was submitted to the Chemical Labora-

tory of the American Medical Association, which reported that a microscopic examination indicated that the product appeared to be orris root, as evidenced by the presence of starch grains having the peculiar horseshoe-like fissures characteristic of orris root. No foreign ingredients were observed in the microscopic examination, and none were indicated by preliminary chemical tests.

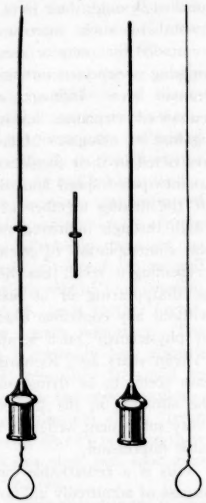
## A SMALL NEEDLE FOR AVOIDING LUMBAR PUNCTURE HEADACHE

C. S. BLUEMEL, M.D., DENVER

The accompanying illustration shows a 3 inch No. 24 gage Luer needle used for making spinal punctures. The sliding sleeve serves as a "holder" and prevents the bending and wobbling that would otherwise occur in performing lumbar puncture with a small caliber needle. The obturator is made of No. 0 cast steel music wire.

The small needle is employed to reduce the size of the puncture-hole in the dura, and thus diminish the subsequent escape of spinal fluid into the tissues. Marked decrease in the incidence of postpuncture headache results.

Before the lumbar puncture is performed, the obturator wire is withdrawn a short distance into the needle. When the spinal canal has been penetrated, the obturator can be pushed forward through the point of the needle. The obturator is then withdrawn, and the spinal fluid normally flows at a rate of from 16 to 24 drops a minute with the patient in the sitting position. Occasionally the needle penetrates a trabecular space behind the dura, and fluid is not obtained, even though the obturator can be pushed through the needle. The needle itself must then be advanced a little farther to tap the spinal canal.



Needle used for lumbar puncture: The sliding sleeve serves as a holder and prevents bending.

One hundred lumbar punctures were performed with this needle in cases in which there were negative Wassermann reactions. The patients were required to lie flat on the back for half an hour after the puncture, and were then allowed to resume their accustomed activities. Among the first fifty patients there were eight postpuncture headaches, only one of which was severe enough to confine the patient to bed. Among the last fifty punctures there was only one headache. The lesser incidence of headache in the latter half of the series is attributed to greater attention given to the point of the needle. The needle must be exquisitely sharp, in order that it may puncture the dura cleanly instead of tearing the dura and leaving in it a hole larger than itself.

A 3½ inch needle of the same gage (No. 24) is used for larger patients. A No. 22 needle with a sleeve is used for injecting serum into the spinal canal, and for injecting the deep branches of the trigeminal nerve in cases of neuralgia. The sliding sleeve permits the use of the small caliber needles by preventing bending and wobbling. The No. 22 needles are made with the usual form of obturator, in which the end is flush with the point of the needle. These No. 24 and No. 22 needles were manufactured for me by Messrs. Becton, Dickinson & Co., Rutherford, N. J.

517 Imperial Building.

# New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

**POTASSIUM BISMUTH TARTRATE-D. R. L.**—A basic potassium bismuth tartrate containing from 64 to 69 per cent. of bismuth.

*Actions and Uses.*—See Bismuth Preparations in The Treatment of Syphilis (J. A. M. A., Aug. 25, 1923, p. 661).

*Dosage.*—From 0.1 to 0.2 Gm. (1½ to 3 grains) by intramuscular injection, preferably into the gluteal muscle. The injections may be repeated at intervals of from four to seven days until a total of from 2.4 to 3.0 Gm. has been given.

Manufactured by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

*Ampoules Potassium Bismuth Tartrate with Butyn-D. R. L., 0.1 Gm.:* Each ampule contains potassium bismuth tartrate-D. R. L. 0.1 Gm. and butyn, 0.012 Gm. suspended in 2 Cc. of a fixed oil.

*Ampoules Potassium Bismuth Tartrate with Butyn-D. R. L., 0.2 Gm.:* Each ampule contains potassium bismuth tartrate-D. R. L. 0.2 Gm. and butyn, 0.012 Gm. suspended in 2 Cc. of a fixed oil.

Potassium bismuth tartrate-Abbott is a finely granular, white powder; odorless, and having a sweetish taste; permanent in the air. It is soluble in water; insoluble in alcohol, ether or chloroform; soluble with decomposition in dilute mineral acids; almost completely soluble in solutions of the alkalies. Its solutions are decomposed by solutions of most alkaloids and local anesthetics. At 100 C. the salt loses a part of its water of hydration and on further heating it carbonizes and leaves a residue which contains potassium carbonate, metallic bismuth and bismuth oxide.

To about 2 Cc. of the aqueous solution (10 per cent.) add a few drops of copper sulphate solution. A blue precipitate is formed which is soluble in potassium hydroxide solution. On standing the alkaline solution gradually deposits a precipitate. To about 5 Cc. of the aqueous solution (10 per cent.) add a small crystal of potassium dichromate: a yellow precipitate forms which is not soluble in potassium hydroxide solution. To about 5 Cc. of the aqueous solution (10 per cent.) add a few drops of silver nitrate solution. A white precipitate results. On boiling the mixture blackens and a mirror forms. The aqueous solution (10 per cent.) gives white precipitates each with barium chloride solution and with sodium hydrosulphite solution.

Boil about 1 Gm. of potassium bismuth tartrate-D. R. L., accurately weighed, with 20 Cc. of alcohol for 15 minutes, filter, evaporate the filtrate in a weighed dish, cool and weigh the residue, if any. The soluble matter should not amount to more than 0.5 per cent. To about 0.2 Gm. of potassium bismuth tartrate-D. R. L., accurately weighed, and 2 Gm. of potassium permanganate, add 5 Cc. of 10 per cent. sulphuric acid, allow the mixture to react for 15 minutes and then thoroughly mix with 15 Cc. of concentrated sulphuric acid. Decolorize the resulting mixture with hydrogen peroxide solution, dilute it with 35 Cc. of water, boil the solution for 5 minutes and finally dilute it with 150 Cc. of water. Saturate the liquid with hydrogen sulphide, collect the precipitate in a weighed Gooch crucible, wash it successively with hydrogen sulphide water, distilled water, methyl alcohol, carbon disulphide, methyl alcohol (again) and ether, dry at 110 C. and weigh. The weight of bismuth sulphide obtained corresponds to from 64 to 69 per cent. of bismuth.

**SCARLET RED SULPHONATE.**—The sodium salt of azo-benzene-disulphonic-acid-azobetanaphthol.—$C_6H_3(SO_3Na)N:N.C_6H_3(SO_3Na).N:N.C_{10}H_6OH$.

*Actions and Uses.*—Essentially the same as those of Scarlet R Medicinal Biebrich (see New and Nonofficial Remedies, 1923, p. 275).

*Dosage.*—See Scarlet R Medicinal Biebrich. Scarlet red sulphonate is marketed only in the form of ointment and emulsion.

Manufactured by Badische Anilin und Sodafabrik, Ludwigshafen, Germany (Parke, Davis & Co., Detroit, distributor). No U. S. patent or trademark.

*Scarlet Red Emulsion, 4 per cent.-P. D. & Co.:* Scarlet red sulphonate, 4 parts; alcohol, 4 parts; sterilized quince seed jelly, 92 parts.

*Scarlet Red Ointment, 5 per cent.-P. D. & Co.:* Scarlet red sulphonate, 5 parts; petrolatum containing a small amount of wax, 95 parts.

*Scarlet Red Ointment, 10 per cent.-P. D. & Co.:* Scarlet red sulphonate, 10 parts; petrolatum containing a small amount of wax, 90 parts.

Scarlet red sulphonate is a dark, brownish-red powder; odorless. It is soluble in water; slightly soluble in ether, alcohol and acetone; almost insoluble in chloroform, benzene, fixed oils, fats and petrolatum.

Add diluted hydrochloric acid to a concentrated, aqueous solution of scarlet red sulphonate; red floccules separate from the orange red solution. Add sodium hydroxide solution to a concentrated aqueous solution of the substance; a brownish-red precipitate forms. Treat the substance with concentrated sulphuric acid. A green solution results which becomes blue on the addition of water, and on further dilution, brownish-red floculcs separate. Dissolve about 0.1 Gm. of the substance in 5 Cc. of glacial acetic acid, heat to boiling, add zinc dust and continue the boiling. The liquid becomes almost colorless.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Five dollars per annum in advance

*Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.*

SATURDAY, JANUARY 19, 1924

## "THAT ORANGE COLORED SLIP" AGAIN

The slip inserted in the December 15 issue of THE JOURNAL proved popular, and the returns were more satisfactory than in previous years. This may have been due to the color, to the location in THE JOURNAL'S pages, or to the new five-dollar rate. In any event, thousands of Fellows and subscribers immediately sent in these slips with remittance for 1924 dues. Many, however, have not done this. For their convenience, as well as for ours, a duplicate slip is placed in this week's JOURNAL. If each unpaid Fellow or subscriber will return this slip promptly with remittance, it will simplify matters at headquarters, and obviate the sending out of annual statements. By the way, many physicians took the hint and included in their check a year's subscription to *Hygeia*. The February number, just out, is unusually attractive; some of its chief features are given on advertising page 4. When ordering THE JOURNAL for the inner sanctum, why not include *Hygeia* for the patients' waiting room? All that is necessary is to change "5" to "8."

## THE DECREASING INCIDENCE OF CHLOROSIS

A peculiar satisfaction comes to the promoter of preventive medicine whenever he can point to the conquest of some formidable disease through the agencies that modern scientific investigations have made available. The sensation of justifiable pride is shared by the medical profession in general when some arch enemy of human welfare has been successfully attacked; and nowadays the intelligent public is not long deprived of the news of such a victory. We may recall, for example, the war that Gorgas and his associates carried on against yellow fever in Havana after the army board had finally indicted the female *Stegomyia* mosquito as the offender. It was a war carried on against the insect by use of fumigations, by destruction of larvae, by protection through screening and through eradication of potential breeding places, and by appropriate quarantine. During the seventeenth and eighteenth centuries and earlier, Havana had been subject to epidemics of yellow fever; and, according to Gorgas' own statement, from 1762 up to the year 1901 there was probably not a single day when Havana did not have a case of this disease within its bounds. Yet, thanks to modern sanitary control, yellow fever has since been speedily and effectually eradicated from the city. In contemplation of the history of preventive medicine, one is reminded also of the check on plague, the control of beriberi, the decrease in hookworm disease, and the inroads on malaria. On the Isthmus of Panama, for instance, the death rate from malarial fever per thousand population sank from 8.49 in 1906 to 0.11 in 1918.

Such are some of the chapters in the story of what modern medicine and sanitary science have accomplished through their joint efforts. In the midst of the recital of such successes, however, we are often reminded that new or seemingly dormant dangers are making unexpected inroads and taking a fresh toll of human lives. Influenza recurs now and then with enhanced virulence, leaving man almost defenseless against its ravages. Maladies once obscure or highly restricted in their incidence are being spread with an unanticipated speed and distribution as a consequence of the linking together of the remotest parts of the earth through improved means of transportation. In the contemplation of such circumstances, it may be refreshing to recall that there are diseases that seem to be disappearing or at least decreasing in frequency without any conscious eradicating efforts on the part of physicians. Such is apparently true of chlorosis. Fifteen years ago, Richard Cabot[1] wrote: "The disease seems to be dying out." The reference was to the situation in the United States at that time, and every subsequent writer on the subject has repeated the same impression.

This is a remarkable circumstance in relation to a disease of admittedly unknown cause. Chlorosis occurs in adolescent girls, and its characteristic symptoms are apparently due to inadequate production of normal erythrocytes rather than to their destruction. It occurs at an age when there is marked acceleration of growth. Conceivably, the primary anemia may be due to an overtaxing of the blood-forming organs at a period of rapid development, so that they fail to keep pace with the heightened demands on the hematopoietic system. Relatively few cases have occurred among the well-to-do; and the impression has gained ground that occupation has some relation to the appearance of chlorosis. "Unhygienic conditions," which presumably include such heterogeneous factors as cramped living conditions, inadequate nutrition, occupational fatigue and unfavorable surroundings, also have been held responsible. In any event, the clinician has not been wont to point to some micro-organism or specific

1. Cabot, Richard, in Osler's Modern Medicine 4:640, 1908.

materies morbi against which an attack might be directed. In explanation of the decrease in the frequency of chlorosis, little more could be said than that "conditions of living have changed" in the last generation.

This experience in America—and also in Sweden, it may be added—seems to be matched by conditions in Great Britain, according to an illuminating study made by Campbell [2] at Guy's Hospital in London. Judged by all the British hospitals for which the statistics have been examined, chlorosis decreased steadily from 1903 to 1918; in individual hospitals the decrease was generally more sudden at some particular part of the period. Little, if any, of the decrease can be accounted for by changes in the use of the word chlorosis or by improved methods of diagnosis. There is no evidence that the war was in any way the cause of the decline; for this was just as rapid in the earlier years, and the decrease was equally marked in a neutral country, Sweden.

In casting about for an explanation of the seemingly universal decrease in chlorosis, possibilities of inborn factors as well as environmental changes present themselves. It seems unlikely that hereditary influences could make themselves felt so rapidly in the history of human disease. Campbell's survey has led him to discover what he regards as good evidence that improved conditions of factory life and domestic service are the main causes of the decrease. Probably these act, he avers, by giving opportunities for more fresh air and exercise. Lack of food, or at any rate of food containing sufficient iron, may, he adds, be a further factor, but this does not seem to be equally important. The improved standard of living is probably only a small factor in the diminution of chlorosis. It would be interesting to secure a more specific and cogent explanation than the ever vague generalization about "fresh air and exercise." In any event, Blaud's pills and their companions on the druggist's iron shelf may soon miss their customary chlorotic purchasers.

The British report [2] alleges that the changes in the specific gravity of the blood in patients with chlorosis and in other girls show that the disease is only an exaggeration of a physiologic change that occurs in at least 10 per cent. of women at puberty. This fact and the age and sex incidence are held to show that the tendency to anemia is part of the change associated with the onset of puberty. Campbell remarks that, as all the changes at this time depend on the internal secretion of the ovary, it is difficult to avoid the conclusion that chlorosis also depends on changes in this organ and that it should be considered with diseases of the ductless glands. This is, however, a speculation of dubious value at a period in medical progress when there is an exaggerated tendency to play fast and loose with endocrine therapy. It is worthy of additional note that, although the immediate symptoms of chlorosis are readily cured, some of them may reappear intermittently for many years, if not through life. Perhaps, in view of its decreasing incidence, the day will come when the subject of chlorosis will have merely antiquarian interest.

2. Campbell, J. M. H.: Chlorosis—A Study of the Guy's Hospital Cases During the Last Thirty Years, with Some Remarks on Its Etiology and the Causes of Its Diminished Frequency, Guy's Hosp. Rep. **73**: 247 (July) 1923.

## MODIFICATION OF THE GERM PLASM

Until after the middle of the nineteenth century, the belief in the inheritance of acquired characters was widespread and was continually being forced on the attention of the medical profession. Presently the German biologist Weismann identified the chromatin material which constitutes the chromosomes of the cell nucleus as the specific bearer of hereditary characters; and he emphasized a sharp distinction between the somatic cells which by division and differentiation build up the body and the germ cells destined to play little part in the life of the individual bearing them but to be liberated and give rise to the next generation. The importance of this distinction, Woodruff [1] writes, can hardly be overemphasized, for at once it makes clear that, for all practical purposes, the bodily characteristics of an individual are negligible from the standpoint of heredity, since the offspring are descendants not from the body cells but from the germ cells, and these in turn from the germ cells of the preceding generation. As Weismann insisted, Woodruff adds, this view makes it difficult to conceive how modifications of the soma can so specifically affect the germ cells which it bears that the latter can reproduce the modifications—in other words, that so-called acquired characters cannot be inherited. And there is no satisfactory evidence that such characters are inherited. The practical bearings of this conclusion, Woodruff continues, are obviously of the highest importance, lying as they do at the very root of many questions in regard to the factors of evolution, not to mention such practical ones as education and eugenics.

The discussions regarding the inheritance of acquired characters, provoked by such considerations, have tended to stimulate research regarding the phenomena of heredity. Lately there has been an occasional recrudescence of claims for the possibility of the inheritance of acquired characters. Experiments are cited in which injuries to a parent have resulted in the appearance of unexpected peculiarities in the offspring of several successive generations. Foremost among such studies are the attempts of Stockard, Pearl and MacDowell to affect the germ cells of mammals so as definitely to modify the generations to which they give rise. A summary of Stockard's [2] elaborate investigations at the Cornell University Medical College, New

1. Woodruff, L. L.: The Development of the Sciences, New Haven, Yale University Press, 1923.
2. Stockard, C. R.: Experimental Modification of the Germ Plasm and Its Bearing on the Inheritance of Acquired Characters, Proc. Am. Phil. Soc. **62**: 311, 1923.

York, has recently been put on record. His tests on guinea-pigs show that the daily inhalation of alcohol fumes does not injure the health or activities or to any degree shorten the life of the treated guinea-pig. The records of offspring and later descendants of such treated individuals are, however, distinctly different from the control records. Thus, the alcohol affects the germ cells in some way in spite of the fact that no deleterious effect on the body or life of the treated individual is discernible. In the offspring of the alcoholic parents, regardless of whether the intoxication is applied to the male or to the female, the postnatal and especially the prenatal mortality was enormously increased and the number of defectives or sterile individuals was large. Of course, such offspring are unable to play a part in the maintenance of the race. The constant elimination of the defectives through several generations and matings with normal stock presently gave animals descended from alcoholized great-great-grandparents that were superior in their records to the normal control animals without hereditary taint of alcohol. Stockard properly argues that the superiority of such descendants from animals of alcoholic ancestry is a point of actual significance. There can be no doubt, as he insists, that the offspring from treated parents are decidedly inferior as compared with the control; and further, that their offspring, or the progeny from treated grandparents, are also evidently inferior; but during these generations an individual selection is taking place through the elimination from the race of the defective and sterile specimens. This selection finally brings out a group of unusually strong specimens from which all the weaklings have been eliminated; and although they are possibly not quite so productive as the control, their offspring show a record superior in vitality. Should one desire to apply these experimental results to the whole alcoholic problem, Stockard adds, it might be claimed that some such elimination of unfit individuals had benefited the races of Europe, since all of the dominant races have a definitely alcoholic history, and the excessive use of alcohol was decidedly more general three or four generations ago than it is today. That is, certain families that were alcoholic three generations ago have not been excessively so in the more recent generations.

It should be clearly realized in the contemplation of such experiments that no one new character or mutation has been brought about and no single old character has fallen out. The treatment has not shown, so far as has been detected, a specific action on any given gen within the chromatin of the germ cells. The action has been general, affecting more the constitution of the hereditary material as a whole and producing a subnormal condition which has lowered the quality of development and brought about slow, arrested individuals. Various toxic influences can doubtless bring about such results. We can only agree with Stockard that these experiments do not furnish evidence of the inheritance of acquired characters. The alcohol treatments used do not injure or noticeably modify the structure or behavior of the treated animals. The weak and defective offspring and later descendants of alcoholic guinea-pigs have no "new character" that was acquired by the parent as a result of the treatment. But, while the parents lived long and well, their descendants showed a high early mortality and were structurally defective in many cases. That the germ cells can be modified detrimentally by factors which leave the parents apparently uninjured is a matter of foremost importance from the standpoint of public welfare.

## LIGHT AND THE BLOOD PLATELETS

The recognized possibilities of heliotherapy, notably in rickets and surgical tuberculosis, have naturally aroused curiosity as to the mechanism through which the radiations produce their effects. The rays themselves can at best penetrate only a short distance through the surface layers of the body. It seems most likely, therefore, that the ultimate benefits are due in the last analysis to intermediate factors for which the radiations are more directly responsible. It has been argued recently, for example, that the ultraviolet radiations, which cause large amounts of calcium and phosphorus to be retained in the organisms of rachitic infants, affect absorption from the intestine.[1] As a direct action on the intestine or its contents seems out of the question with rays that penetrate the skin to a depth of not more than 1 mm., one must assume that, as a result of the action of the ultraviolet rays on the skin or on the blood in the capillaries of the skin, the physical or chemical condition of the blood is in some way altered.

In studying the effects of light on the organism, Cramer and Drew [2] of London found that animals kept in a dark room since birth do not show any obvious signs of ill health. They grow approximately at the same rate as those kept in well lighted rooms and fed on the same diet. Nevertheless, they do differ from the normal; and the difference manifests itself morphologically by an abnormally low number of blood platelets. Exposure of the animals to radiation from a mercury vapor lamp was followed by an augmentation of the platelet count. Light, therefore, seems to have a stimulating effect on the formation of blood platelets. This was further verified by the effects of light on rats suffering from a deficiency of vitamin A, in which there is likewise a thrombopenia.

So long as the function of the platelets remains uncertain, the ultimate influence of a factor, such as light, which somehow promotes the production of these

1. Orr, W. J.; Holt, L. E., Jr.; Wilkins, Lawson; and Boone, F. H.: The Calcium and Phosphorus Metabolism in Rickets, with Special Reference to Ultraviolet Ray Therapy, Am. J. Dis. Child. **26**: 362 (Oct.) 1923.

2. Cramer, W., and Drew, A. H.: The Effect of Light on the Organism, Brit. J. Path. **4**: 271 (Oct.) 1923.

blood components, cannot be decided. Cramer and Drew are of the opinion that the blood platelets represent a defensive mechanism against bacterial infection. On this hypothesis, the advantage to the organism could easily be conjectured. Light is not the sole factor that determines the production of platelets. It is interesting to note that in cases of experimentally produced deficiency of vitamin A, for which there is some evidence of a diminished bactericidal power in the body, light tends to delay, though it does not prevent, the onset of some of the pathologic symptoms. Park,[3] for instance, has reported that sunlight and fresh air may delay the development of xerophthalmia in rats kept on a deficient diet. If the platelets are formed in some internal organ, the photosynthetic effect must be very indirect. Cramer and Drew are more inclined to the view that these blood cells are formed by the endothelial cells of the blood vessels and lymphatics. On this basis, the described effect of light might be attributed to a local stimulating effect of the rays on the endothelial cells of the peripheral vessels.

3. Park, E. A.: The Etiology of Rickets, Physiol. Rev. 3: 136 (Jan.) 1923.

## Current Comment

### NEW STUDIES OF SOME WIDELY USED DRUGS

The modus operandi of some of the most useful and long valued drugs is still under debate. With the elevation of pharmacology to a dignified position among the medical sciences, a more critical consideration of reputed medicinal agents has been inculcated so that much of the dross of inherited beliefs is gradually being eliminated. This does not mean that so-called modern scientific medicine promptly waves aside all that it cannot explain, or that it ventures to discard as useless every reputed remedy that has failed to disclose a tenable mode of therapeutic action to the pharmacologic investigator. He would be rash, indeed, who overlooked or undervalued the great importance of empiric experience in therapy. How often has the newer knowledge merely confirmed the rationality of older practices that owed their genesis to circumstances in which ultramodern scientific considerations played no part whatever. Thus, the use of cod liver oil antedated by a century the discovery of fat-soluble vitamins. Pharmacology endeavors, rather, in many cases to test the alleged theories of pharmacodynamic action and to discard those that are proved untenable. Such destructive criticism often leads to progress quite as well as do more positive indications of physiologic potency. This may lately be noted in the study of a group of substances, notably salicylates, cinchophen, neocinchophen and related products, that find a widespread, growing application in therapy. The latest (1923) edition of Useful Drugs, prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, speaks of the drugs mentioned as "highly efficacious" and "exceptionally efficient" in the management of certain phases of arthritis. The assumption that the drugs exert an etiotropic action by destroying bacterial agencies responsible for the disease has repeatedly been disproved. They do not function as germicides, for example, in rheumatic fever assumed to be caused by micro-organisms. Recently, Hanzlik and Tainter [1] of the Stanford University Medical School have observed that the so-called antiphlogistic action of the drugs referred to, as exemplified in the prompt amelioration of the objective signs of inflammation, including the swelling and edema of the joints, is not due to a direct action on the inflammatory process. Experimental edema of the head and neck in animals was not beneficially influenced by previous and simultaneous treatment of the animals with sodium salicylate, cinchophen or neocinchophen in large doses corresponding to the clinical "toxic" dosage used in the treatment of acute rheumatic fever. Negative results with respect to antiphlogistic effects have also been observed in the treatment of other kinds of edemas. Consequently, the Stanford pharmacologists conclude that the beneficial therapeutic effects of these drugs in rheumatic fever appear to be produced neither through etiotropic nor organotropic, but rather through symptomatic action, the benefits being mediated through antipyresis and analgesia. It is always well to know precisely what may and what may not be expected of drugs.

1. Hanzlik, P. J., and Tainter, M. L.: Comparative Antiphlogistic Effects of Salicylate, Cinchophen and Neocinchophen in Experimental Edema of the Head and Neck, J. Lab. & Clin. Med. 9: 166 (Dec.) 1923.

### RESUSCITATION FROM ELECTRIC SHOCK

Sir Thomas Oliver has remarked that, while electricity has aided civilization and been of great assistance to man, it has brought not only light and comfort into our homes, but dangers as well. Hundreds of deaths are the result of the accidental passage of electric currents of commercial voltage through the bodies of persons accidentally exposed to them. Not all of the contacts with conductors of electricity result fatally, and it is not unlikely that a larger number of resuscitations or rescues could be effected if the pathogenic features of the exposures were better appreciated. The main theories of the cause of death involve the arrest of respiration and the stoppage of the heart. Drinker [2] has lately emphasized anew that the first measure to be applied in any event is artificial respiration, a warning widely issued already in 1912 by the Commission on Resuscitation from Electric Shock. The overwhelming danger that attends a deficient supply of oxygen to the body lies in the nervous degenerations of a permanent nature that lack of this vital element speedily brings about. Cessation of breathing after an electric shock need not lead to an instantaneous deprivation of oxygen from all parts of the body, so that the chance for successful restoration of function through reoxygenation of the circulation must always be reckoned with. Every moment of delay is serious; therefore,

2. Drinker, C. K.: The Present Status of the Problem of Resuscitation in Cases of Electric Shock and of Carbon Monoxide Poisoning, J. Indust. Hyg. 5: 255 (Nov.) 1923.

methods of artificial respiration should be taught prominently and repeatedly to every able bodied person. Each chance for help should be accepted without hesitation. When the heart becomes directly affected by the electric current, the fibrillation that frequently ensues is a serious obstacle to recovery. Whether spontaneous escape from such disordered function of the heart often occurs in man is problematic. Even in such instances, however, the insurance of adequate ventilation of the lungs can only act beneficially on the circulation, including that of the heart. Drinker finds no justification for the advocacy of countershock in attempts to revive the victims of the electric current. First and last, attention should be directed to the possible need of artificial respiration.

## Association News

### THE CHICAGO SESSION

#### Reduced Railroad Rates

The passenger associations of various sections of the United States have established a rate of one and one-half fare for the benefit of those who will attend the Seventy-Fifth Annual Session of the American Medical Association. The benefit of this rate will be extended to members of the Association and to members of their families who accompany them to Chicago. It will be necessary to purchase tickets to Chicago, paying the regular fare. At the time tickets are purchased, certificates must be secured from the railroad agents. These certificates must be validated by the Secretary of the Association and by railroad representatives at Chicago. After validation, the certificates will entitle holders to a rate of one-half fare for the return trip to their homes. Tickets for the occasion will be placed on sale in the extreme Far Western states not later than June 3; in territory nearer to Chicago, the dates of sale will be adjusted in accordance with distances to be traveled.

#### Hotel Reservations for Delegates

The House of Delegates instructed the Secretary of the Association to arrange for hotel accommodations for all delegates during the Seventy-Fifth Annual Session of the American Medical Association, to be held in Chicago, June 9-13. In compliance with these instructions, tentative reservations have been made at the Drake Hotel, Chicago, so that each member of the House of Delegates may be assured of a room at that hotel. The names of all delegates, as far as they are known at the present time, have been sent to the management of the hotel, and letters have gone out to all delegates requesting them to write direct to the Drake Hotel asking for the reservation of such accommodations as may be desired. In writing the hotel, delegates should be careful to specify that the accommodations desired are to be provided from the allotment of rooms tentatively reserved for members of the House of Delegates. Reservations should be made at the earliest possible time. If, for any reason, a delegate does not wish to have accommodations at the Drake Hotel, he should notify the Secretary of the Association as soon as possible in order that reservations tentatively made and not required may be released for the accommodation of other members of the Association.

---

**Rural Health Campaigns.**—The first and greatest need is for the coordination of the health activities which are being introduced into rural communities. Under present conditions many rural districts are periodically aroused by a campaign in the interest of some particular health problem. The arguments put forth in favor of each immediately win the sincere support and interest of various elements in the community.—W. S. Draper: *Pub. Health Rep.* **38**:2716 (Nov. 16) 1923.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Removal of Quarantine Station Proposed.**—Representative McDuffie of the first Alabama district has introduced a bill into Congress providing for the removal of the Mobile quarantine station from Fort Morgan to Sand Island and appropriating $500,000 for the erection of a new station.

**Chiropractors Again Found Guilty.**—Drs. Stine and Hock, chiropractors of Florence, were found guilty, Dec. 3, 1923, of practicing medicine without a license and fined $50 and costs, each. These men were found guilty on the same charge in September, and were each fined $100, according to reports.

### CALIFORNIA

**Personal.**—Dr. Hall Vestal, Richmond, was recently elected president of the Contra Costa Medical Society at the annual meeting.——Dr. Ashley S. Parker has been appointed health officer of Merced to succeed Dr. Brett Davis, who resigned recently.——Dr. William W. Wymore, San Francisco, has been appointed a member of the board of health to succeed Dr. George B. Somers.——Dr. Clarence O. Sappington, San Francisco, has been appointed instructor in vital statistics at the School of Public Health, Harvard University, Boston.——Dr. Aloysius P. O'Brien has been appointed president of the San Francisco Board of Health.

### CONNECTICUT

**Bequest to Medical Society.**—The sum of $10,000 has been bequeathed to the Hartford Medical Society by the will of the late Dr. William W. Knight, Hartford, to be held as a permanent fund known as the Knight Lecture Foundation.

**Therapeutic Institute Closed.**—The Hartford Institute of Therapeutics, owned by the "Rev. Dr." George F. Coggswell, a "magnetic healer," was closed, January 3, following an investigation by the special grand jury (THE JOURNAL, January 12, p. 133).

**Permit Revoked.**—The health commissioner revoked the state permit issued to the Hudson Thermometer Company of Brooklyn, N. Y., to put on their clinical thermometers the stamp "Connecticut Seal," following a hearing before the public health council, Dec. 31, 1923. It was stated that some of the thermometers sold by the company in Connecticut were so inaccurate as to be almost dangerous.

**Diploma Inquiry Continued.**—Two hundred additional death certificates, making a total of 600, will be presented to the special grand jury to determine whether negligence was a contributing cause of death. Sixty additional subpenas have been served to "practicing physicians" in Hartford, New Haven, Waterbury, Bridgeport, Meriden, Bristol, Willimantic, Norwich, Stamford and Greenwich. Subpenas were also issued for members of the eclectic examining board, which comprises Drs. Ernest A. Markham, James E. Hair, John H. Perry and Ralph A. White, and for Dr. James E. Christian, former secretary of the state eclectic association. The eclectic board issued the following letter which substantiates what documentary evidence before the grand jury had previously established:

"We are convinced that diplomas issued by the Kansas City College of Medicine and Surgery and the St. Louis College of Physicians and Surgeons were fraudulently issued and used by the recipients as a basis to take examination in the state of Connecticut. Our investigation has convinced us that a fraud has been perpetrated and the state society (eclectic) voted to take the names of these two colleges off the list."

It is reported that the grand jury has voted that the licenses to practice in Connecticut of the following "physicians" be revoked: Maurice B. Burstan, Bridgeport; William D. MacCormack, Willimantic; Leroy Coombs, East Norwalk; Gerald A. Richardson, Bridgeport; David K. Aronson, Waterbury; Samuel Slabotsky, Derby; Julius P. Karp, Hartford; Naman H. Burkhead, Darien; Harry Chaimson, Bridgeport; Etamar A. Mower, Hartford; Samuel Lillienthal, Bridgeport; Samuel Lerner, Harry Braverman and Anthony R. Campo of Stamford; Joseph E. Koplowitz, Hartford; Irva M. George, New Haven; George H. Nixon, Derby; John Raba, Bridgeport; Frazier Whittington and F. Cornwall of Waterbury, and

William M. Roody, a native of Turkey. With a few exceptions, these men were graduates of Missouri "diploma mills." The twenty-six licenses revoked at the December session of the special grand jury and these twenty-one make a total of forty-seven. Other "physicians" subpenaed were: David Babtkis, Bridgeport; Albert Sweben and Ralph Del Giudice of New Haven; Ralph F. Long, Terryville; Nelson A. Gourley, Hartford; Spero G. B. Vryonis, Bridgeport; Rudolph von Walden, New Haven, and Alfred W. Lowrie, Hartford, who was summoned to explain "sacred oils" which, it appears, will cure everything from "toothache to fractures." "Dr." Pasquale Romeo, Kansas City, who did not appear, has been traced to London, England. "Dr." Simon Louis Katzoff, Bridgeport, "first vice president" of the "American Progressive Medical Association" (THE JOURNAL, Dec. 15, 1923, p. 2051) was the first man called, January 7. H. H. Brooks and Smart Brand, both of Hartford, were summoned to tell the jury of "cures" as mechanotherapists and healers. "Prof." Rudolph von Walden, who conducts the "Walden Institute," New Haven, and who recently opened a sanatorium on Leetes Island, according to reports, was arrested, January, 1917, in Mobile, Ala., on a charge of practicing medicine without a state license. In 1916, he was found guilty of practicing medicine without a license at Portsmouth, Ohio, and fined $300 and costs and given a suspended sentence of a year; in February, 1921, he was arrested in St. Petersburg, Fla., on a charge of using the mails to defraud in regard to the Walden Institute, Cincinnati. He is not licensed to practice medicine in Connecticut, and is at present wintering in the South.

## DISTRICT OF COLUMBIA

**Dr. Howard Honored.**—Dr. Leland O. Howard, chief of the bureau of entomology of the department of agriculture, Washington, has been made a Chevalier of the Legion of Honor by the French government, in recognition of his services to agriculture.

**Senate Resolution Hits Quacks.**—A resolution has been introduced into the Senate by Senator Copeland of New York which directs the commissioners of the District of Columbia to draft proposed legislation "adequately to protect the people of the District against incompetent, unscrupulous and otherwise unfit practitioners, who assume to treat human disease, injury or defect." The purpose of the resolution is to effect more adequate protective laws for the District of Columbia against incompetent practitioners of medicine under all systems of practice.

## GEORGIA

**Calhoun Memorial.**—The Abner Wellborn Calhoun medical library, dedicated as a memorial to the late Dr. Calhoun, Atlanta, who died in 1910, has been opened at Wesley Memorial Hospital. The library, containing some 5,000 volumes, was presented to the board of directors of Emory University by Dr. Ferdinand Phinizy Calhoun, son of the deceased physician.

## ILLINOIS

**New Tuberculosis Sanatorium Opened.**—The administration, hospital and surgical sections of the Palmer Tuberculosis Sanatorium, Springfield, were opened for the reception of patients, January 8. These buildings, erected at a cost of $75,000, are part of a building program which will probably be completed during 1924. The hospital section, to be devoted to surgery of the lung and surgical tuberculosis, has a bed capacity of thirty-five.

**Personal.**—Dr. Hugh E. Cooper, Peoria, was elected county physician to succeed Dr. Frederick H. Maurer, resigned.——Drs. T. Van Boyd and Lafayette Green were elected president and secretary-treasurer, respectively, of the St. Clair County Medical Society, recently, at Belleville.——Dr. Albert E. Campbell has resigned as city superintendent of health of Springfield.——Dr. Beveridge H. Moore, Chicago, has been appointed attending orthopedic surgeon to the Children's Memorial Hospital.

### Chicago

**Fund for Disabled Physicians.**—Under the will of Mrs. Albertine Gehrmann, widow of Dr. Adolph Gehrmann, the sum of $45,000 is left to provide a fund for "sick and disabled physicians."

**Psychopathic Hospital.**—According to the annual report of the Psychopathic Hospital of Cook County, among 5,550 patients confined in that institution during 1923, there were 1,310 cases of acute alcoholism, and 1,920 cases of dementia praecox.

**Hospital News.**—The sum of $400,000 has been bequeathed to the Children's Memorial Hospital under the will of Miss Martha Wilson.——Additions to the West Suburban Hospital to bring its capacity to 500, which will cost $1,250,000, will be started at once.

**Loyola University Acquires Dental College.**—The Chicago College of Dental Surgery, Harrison and Wood streets, has been acquired by Loyola University. The executive management of the school, its teaching faculty and its name will remain unchanged. Drs. Truman W. Brophy, C. N. Johnson and William H. Logan will continue to administer the affairs of the school. One provision of the transfer was that a percentage of the annual gross revenue of the school will be devoted to the formation of permanent endowment for the advancement of dental education and research. The Chicago College of Dental Surgery was founded forty-two years ago.

## KANSAS

**Diploma Mill Graduate.**—"Dr." Glenn C. Davis has been asked to resign from the Osawatomie State Hospital, Osawatomie, by the superintendent, following discovery that Davis became a "doctor" after eight months of study in the Kansas City University of Physicians and Surgeons, according to reports. Davis, who "graduated" from the Kansas City institution in 1919, obtained a license to practice in Nevada, and in June, 1923, a license to practice in Kansas. Steps have been taken to bring about the revocation of these licenses.

## LOUISIANA

**Personal.**—At a meeting of the St. Tammany Parish Medical Society, in Covington, Dec. 20, 1923, Dr. Frank F. Young was elected delegate to the state medical society meeting to be held in Opelousas. The society on the same date passed a resolution expressing confidence in Dr. Young and suspending judgment regarding an indictment against him, under the federal government, for a shortage of morphine in his sanatorium.

## MAINE

**Health Officers Confer.**—A meeting of the district health officers was held in Augusta, January 2, to confer with state health commissioner, Dr. Clarence F. Kendall. Dr. H. L. Hadley, Machais, has been appointed health officer of the sixth district to fill the vacancy caused by the death of Dr. William H. Tukey, Machais.

## MARYLAND

**Fund for Women's Clinic.**—It has just been announced that Mrs. Lucy Wortham James, New York, gave $400,000 for the women's clinic at Johns Hopkins Hospital, Baltimore, which was recently dedicated (THE JOURNAL, January 12, p. 133). Three classes of women will be treated—the free ward patient, women of moderate means, and those able to pay the full charge. The clinic will accommodate eighteen persons. Dr. J. Whitridge Williams, chief of the department of obstetrics, and Dr. Thomas H. Cullen, chief of the department of gynecology, will be in charge.

**Dispensary at the Union Memorial Hospital Founded.**—To perpetuate the memory of John R. Bland, officers, directors, agents and employees of the United States Fidelity and Guaranty Company, have donated $40,000 to found a free dispensary at the Union Memorial Hospital. Contributions have come from every state in the Union and from virtually every territory of the United States and Canada. The dispensary, located on the ground floor of the new Union Memorial Hospital, was opened to the public in September, but the donors have but recently become known. The committee having charge of the memorial fund included Jesse B. Riggs, chairman; Sidney Hall, Samuel H. Shriver, Charles G. Whyte, Frank H. Maguire, Clarke J. Fitzpatrick and William E. Moore. A memorial tablet will be placed in the dispensary.

**Personal.**—Dr. Harry D. McCarty has resigned as physician-in-charge of the tuberculosis hospital, Bay View. Dr. McCarty will remain with the department of supervisors of city charities, taking charge of the dispensary service with headquarters at Baltimore City.——Dr. John S. Fulton, state health director, has appointed Dr. Elmer C. Kefauver, Thurmont, full-time health officer of Frederick County.——Major Gen. H. M. Neeb, former chief of military medical service in the Dutch East Indies and now professor of hygiene in the Technical University at Bandong, Java, is visiting Baltimore to study sanitation.——Dr. Anthony V. Buchness, assistant resident surgeon at Bay View Hospital, has resigned and will

be succeeded by Dr. Ira P. Champe. Dr. Thomas W. Cornwall, resigned Dec. 15, 1923, from the medical staff and Dr. Arthur Burns, January 15. A superintendent for the institution has not yet been appointed.——Dr. Hans Zinsser, professor of bacteriology, Harvard Medical School, spoke, January 14, at the School of Hygiene and Public Health, Johns Hopkins University, on "The Present State of Knowledge of Hypersusceptibility."——Dr. Paul Kammerer of Vienna delivered a lecture on "Rejuvenation and the Prolongation of Human Efficiency," January 15, before the medical societies of the Johns Hopkins Hospital and the Society of Hygiene of the Johns Hopkins University.

## MASSACHUSETTS

**Hospital Service for Medical Missionaries.**—The Deaconess Hospital, Boston, is considering a tentative plan to care for missionaries who have served in foreign lands. Many missionaries suffer from exposure to climatic conditions and diseases incident to residence in tropical countries and frequently have to return to their native land in search of health. It is stated that about 500 missionaries representing the Methodist Church alone return to this country every year. Should this service be established, Dr. George C. Shattuck will direct the work.

## MINNESOTA

**Dr. Rodda to Succeed Pirquet.**—Dr. Frederick C. Rodda, Minneapolis, associate professor of pediatrics at the University of Minnesota Medical School, has been appointed acting head of the pediatrics department to succeed Dr. Clemens Pirquet, Vienna, who resigned in October, 1923, after holding the position less than a month.

**University News.**—At the meeting of the board of regents of the University of Minnesota Medical School, Minneapolis, Dec. 11, 1923, Dr. Fred B. Snyder was elected president; M. M. Williams, vice president, and A. J. Lobb, secretary. Fellowships at the Mayo Foundation, Rochester, were granted by the board to the following: Drs. John G. Anderson, Frederick A. Bothe, Donnel B. Cobb, Granville S. Delamere, Jackson K. Holloway, Russell O. Lyday, Andrew Robert Mailer, Alfred L. Mayfield, Norman B. Muhme, Samuel H. Nixon, John Wesley Stinson, Isaac M. Webber, Joseph Daly, Howard L. Sargeant, Knut H. Houck, Christian J. Rohwer, John F. Gipner, Ellis B. Gray, Lillian M. J. Mayer, Samuel W. Becker, Stephen T. Parker and Donnan B. Harding.

## MISSOURI

**Physician Made Chief of Police.**—Dr. Paul V. Woolley, police surgeon, Kansas City, has been appointed chief of police of the city, succeeding C. A. Vassar. Dr. Woolley served overseas as a major during the World War.

**Grand Juries and "Doctors."**—Sixteen Clay County physicians and chiropractors most of whom are said to have practiced at Excelsior Springs, the well known health resort, were indicted by a grand jury at Liberty, Dec. 21, 1923. Most of the evidence for the three weeks' session was compiled by the county medical society. An investigation into the Missouri diploma mills by the Jackson County grand jury was started, January 4.

**Hospital Ordinance.**—The board of aldermen of St. Louis is considering an ordinance authorizing the hospital commissioner to charge patients at the City Hospital $2.20 a day when the patients are able to pay. The hospital commissioner at the request of the St. Louis Medical Society explained the ordinance at a meeting of the society, Dec. 18, 1923, and a committee was appointed by the medical society to confer with the commissioner, who was requested to hold back the ordinance until after such conference.

## MONTANA

**Personal.**—Dr. Walter H. Brissenden, Roundup, has been appointed county physician to succeed Dr. David E. Baird. ——Dr. Thomas J. McKenzie, Anaconda, has been appointed physician of Deer Lodge County.——Dr. Wyman W. Andrus has been appointed city health officer of Miles City to succeed Dr. Francis S. Grey.——Dr. Benoni A. Place, Great Falls, has been reelected county physician.——Dr. Roscoe C. Main, city health officer of Billings, has resigned to locate in California.

## NEW JERSEY

**Town Quarantined for Smallpox.**—The entire village of Erial, near Clementon, was quarantined, January 11, as a result of the discovery of thirteen cases of smallpox. All persons were ordered vaccinated by the Gloucester township board of health, and the township schools closed.

**Eugenics Bill.**—The Hudson County Medical Society at a meeting in Jersey City, Dec. 4, 1923, went on record as favoring the proposed eugenics legislation, by a vote of 27 to 23. This bill requires that prospective bridegrooms submit certificates from physicians that they are free from venereal disease before being given a marriage license. A permanent building for the society was considered, to be erected in Jersey City at a cost of $75,000 and in which one of the rooms would be dedicated as a memorial to the late Dr. F. Faison.

## NEW YORK

**Society News.**—At the meeting of the New York Gastroenterological Society, in November, 1923, Dr. Clarence A. McWilliams, New York City, was elected president and Dr. Charles Eastmond, Brooklyn, secretary.

**Smallpox Outbreak.**—An outbreak of smallpox is reported to be in progress in Albany. As many as forty cases are said to have been reported to the health department up to January 6. The origin of the epidemic has not yet been made public. Thus far the disease is mild.

### New York City

**Medical School Sells Building.**—The New York Post-Graduate Medical School and Hospital has sold the six story building on East Ninth Street.

**City Death Rate for 1923.**—According to the records of the health department, the New York City death rate for 1923 was 11.72 per thousand of the population, as compared with 11.93 for 1922. This is the second lowest death rate in the history of the city, the lowest being that of 1921, which was 11.17 per thousand population. The outstanding feature of the record of 1923 is the low infant mortality rate, which was 66 per thousand births reported; during 1922, it was 75.

**Free Insulin Clinic.**—A clinic for the free treatment of diabetic patients and to train students in the proper administration of insulin will shortly be opened in the outpatient department of the New York University Medical School. There will be twelve instructors from the medical school, a nurse and a technician under the direction of Dr. William J. Pulley. Administration of insulin without charge was made possible through the efforts of Dr. Pulley, who personally collected sufficient funds for this purpose.

**New Move Against Quacks.**—A thorough census which will list and catalogue every physician and dentist, of whatever school, in the Borough of Brooklyn, has been undertaken by the police in conjunction with District Attorney Charles J. Dodd. This, in the opinion of Judge Dodd, will be the most effective remedy against quackery yet devised. Postmaster General New has been asked to enter the fight in a letter by C. A. Lewis, managing editor of the *Pharmaceutical Era*, urging that the mails be closed to diploma mills.

**Clinical Information Bureau Merges with Academy of Medicine.**—The New York Academy of Medicine has started to develop some of the activities planned in connection with the projected new building. One step recently taken is the consolidation of the clinical information bureau, which has its headquarters in the academy building with the academy of medicine. The trustees of the academy have appointed Dr. Linsley R. Williams, secretary of the National Tuberculosis Association, medical director of the academy. Dr. Williams will have supervision over all the activities of the reorganized institution.

**Meetings on Child Health.**—Those interested in this subject were invited to attend a meeting held under the auspices of the public health committee of the New York Academy of Medicine, on January 3, to hear the following addresses: The "Principal Problems of Child Health Work in New York City," E. H. Lewinski-Corwin, Ph.D., executive secretary of the public health committee; "Standards of a Nutrition Clinic," Dr. Charles Hendee Smith; "Safeguarding of the Mental Health of the Child," Dr. Arnold Gesell, Yale University; "Community Responsibility for Child Health," George E. Vincent, Ph.D.

**Postgraduate Lectures.**—The course of free lectures to physicians at the Post-Graduate Medical School and Hospital, Friday afternoons for February will be as follows: February 1, "Recent Advances in the Diagnosis and Treatment of Diseases of the Heart; Medical and Surgical Aspects" (with lantern slides), Dr. Robert H. Halsey; February 8, "Symptoms and Treatment of Injuries to the Skull and Vertebrae," Dr. Charles A. Elsberg; February 15, "Laboratory Aids in

the Diagnosis and Treatment of Syphilis," Dr. Ward J. McNeal; February 29, "Cleft Palate," Dr. Harold S. Vaughan. Resident and visiting physicians are cordially invited to attend.

**Prevention of Heart Disease.**—Under the auspices of the Association for the Prevention and Relief of Cardiac Diseases, an extended survey of the school children of the city has recently been completed. Excluding parochial schools, registration of 817,000 children is recorded. Of this number, 5,719 were found to have organic heart disease. The incidence of heart disease ranges from 1.5 to 2.0 cases in every 100 school children. These children were segregated into special classes and were physically examined, etiologic factors were removed, dietary and physical training were instituted and supervision of home environment was provided. This resulted in a marked physical improvement, lessened absence from school, better school work and grade progress. Parents were interviewed and instructed. The school day absence of the pupils was reduced from 39.9 days to 16.8 per pupil.

**University News.**—An additional gift of $50,000 from Mrs. Charles H. Sherrill to the New York University and Bellevue Medical College, bringing the total of her gifts to that institution to $140,000, was announced, January 7. The fund is to be known as the Edward N. Gibbs Memorial Roentgen-Ray Fund.——In addition to Mrs. Sherrill's gift, the dean announces the donations of $40,000 from the estate of Mrs Egbert LeFevre, widow of a former dean of the college, who stipulated that $25,000 should go to the Egbert LeFevre Memorial Library, and $15,000 to the Egbert LeFevre Deanship Fund. The sum of $11,000 has also been received for the Medical College Dispensary Endowment Fund. Mrs. B. Fleischmann Holmes has given $2,500 for the campaign fund and $5,000 for work in therapeutics, and the Cardiac Clinic received a gift of $1,000 from Mrs. William K. Vanderbilt.

**Hospital News.**—Application for incorporation has been made for the Brooklyn Cancer Research Hospital, formerly known as the Trinity Hospital, Brooklyn, which recently erected a $150,000 building.——The Brooklyn Children's Fresh Air Camp Association will establish summer camps for children at Sussex, N. J.——The old Minturn Hospital, East Twenty-Sixth Street, which was closed several years ago, has been taken over by the health department, and is now being operated in conjunction with the Willard Parker Hospital.——Construction work has been started on "The Delafield," the twelve story combination hospital-apartment hotel to be erected at Fifth Avenue and One Hundred and Third Street, New York, by the Physicians' Medical Hotel Company. The building will contain 480 rooms of one, two, three and four-room suites with baths, eight operating rooms, hydrotherapeutic and electrotherapeutic rooms, and others. The building will be erected at a cost of $1,000,000. Officers of the company are: Dr. David S. Flynn, president; Dr. Walter H. Conley, hospital consultant, and Matthew T. Horgan, secretary-treasurer.——In the annual report of the Brooklyn State Hospital, just published, $2,000,000 is asked for by the superintendent, as the minimum with which the conditions of overcrowding may be relieved. The report discloses that under present conditions there are 124 patients to each nurse and 144 patients to each physician. The need for a greater number of physicians, nurses and attendants is self-evident.——The board of estimate has appropriated $300,000 for alterations and repairs to Bellevue and the allied hospitals in Manhattan. A portion of the fund will be used for fire prevention measures. No appropriations were made to hospitals in other boroughs.

## NORTH DAKOTA

**Hotel Inspection.**—In Bulletin No. 5, office of the state food commissioner and chemist, Fargo, is a report of the Hospital Inspection Act, 1922-1923. It states that a practical method for the fumigation and disinfection of hotels, adopted by the state hotel inspector of Kansas, is recommended for North Dakota hotels. The state inspection law requires that fire escapes shall be provided; carpets shall be cleaned; proper provision be made against infectious and contagious disease; all rooms must be properly ventilated; screens provided. Owners interfering with inspectors shall be guilty of misdemeanor and fined not less than $10.

## OHIO

**Society Reorganizes.**—The Sandusky County Medical Society has been reorganized with Dr. Howard K. Shumaker, Bellevue, president, and Dr. C. R. Curtin, Sandusky, secretary-treasurer. Application will be made for a new charter to the state medical society, which revoked the former charter at the annual sessions in April, 1923.

**Gift to Western Reserve University.**—It was announced by the trustees, Dec. 29, 1923, that J. H. Wade has donated $40,000 to Lakeside Hospital, Cleveland, toward the $12,000,000 medical and hospital project to be undertaken by the Western Reserve University Medical School. The group of buildings, for which ground was broken, Aug. 7, 1922, will be erected on Euclid Avenue between Adelbert and Abington roads. The medical school with which the other units will be affiliated, is nearing completion; the Babies' and Maternity hospitals is well under way; the nurses' home, for which Mrs. Chester C. Bolton donated $500,000, will be finished shortly. Mrs. F. F. Prentiss has recently given the university a tract of land at the corner of Euclid Avenue and Adelbert Road where she will erect, at the cost of $500,000, a medical library building to be known as the Dudley Allen Memorial Library.

## OKLAHOMA

**"Clean-Up" Under Way.**—At a meeting of the state board of medical examiners, January 8, at Oklahoma City, a statewide clean-up of the medical profession was launched. Dr. L. H. Gordon, Claremore, charged by the federal government with violation of the Harrison Narcotic Law, was the first to be called of thirty to forty physicians in the state which are "under observation," the board declares. His trial was scheduled for the afternoon of January 8. Six cases of "diploma mill" graduates said to be operating in Oklahoma are also under observation. It is also stated that there are numerous Abrams' machines in use in the state. Where the operators are licensed physicians, their licenses will be revoked, and those operating without licenses will have charges filed against them in district courts, it was declared.

## PENNSYLVANIA

**Society News.**—At the annual banquet of the Berks County Medical Society at Reading, January 8, the following officers were elected: president, Dr. Hiester H. Muhlenberg; vice presidents, Drs. Howard U. Miller, Mount Penn, and David S. Grim, Reading; secretary, Dr. John E. Livingood; treasurer, Dr. Robert M. Alexander, both of Reading. Dr. Donald Guthrie, Sayre; Dr. John Norman Henry, Philadelphia, president, and Dr. Howard Clinton Frontz, president-elect, of the state medical society, gave addresses.

**Crossing Accidents.**—One hundred and ninety persons were killed and 595 injured in 1,042 accidents at steam railroad crossings in the state in 1923, according to reports to the bureau of accidents, public service commission. Automobiles figured in 85 per cent. of the total number of accidents and in 83 per cent. of the total number of persons killed. Compared with 1922, the reports show an increase of 360 in the number of accidents, 52 in the number of killed and 107 in the number of injured. The total number of automobiles struck at grade crossings was 883, causing the death of 137 and the injury of 509 occupants. Nineteen cars were driven through lowered gates and 81 were hit by stalling on the tracks. As a comparison, in 1914, there were 48 grade crossing accidents, resulting in 13 killed and 85 injured.

### Philadelphia

**Police Surgeons Resign.**—Two more police surgeons have resigned because of the constantly increasing number of drunken motorists to be examined. This makes a total of six surgeons who have resigned in the last three months for the same reason. The two latest to give up the work were Drs. Henry H. Freund, who for thirty-three years has been attached to the Seventh and Carpenter streets station and Charles J. Watson, detailed at the Branchtown station.

**Plan to Enlarge Medical School.**—Plans for the erection of a wing to the medical school of the University of Pennsylvania to house the laboratories of anatomy and physiologic chemistry, have been submitted to the board of trustees by Dean William Pepper and his associates in those two departments. The addition has been made possible by the recent conditional gift of the Rockefeller Foundation and General Education Board. If the proposal of the medical faculty is approved by the building and grounds committee of the board of trustees, the structure will be erected as a T-shaped wing immediately adjoining the present building on Hamilton Walk between Thirty-Sixth and Thirty-Seventh streets, thus permitting the five laboratories: physiology, pathology,

pharmacology, anatomy and physiologic chemistry to be together.

**Personal.**—Dr. Eugene F. Dubois, of the Russell Sage Institute of Pathology, addressed the Philadelphia County Medical Society on "Basal Metabolism and Its Practical Applications in the Diagnosis and Treatment of Thyroid Disease," January 9.——Dr. Wilmer Krusen has been appointed director of public health and charities by the mayor elect.——Dr. Thomas McCrae, Magee professor of medicine and clinical medicine, Jefferson Medical College of Philadelphia, has been invited to address the Royal College of Physicians, London, England, in April. Only once during the last fifty years has such invitation been extended to an American.——Dr. Jessie W. Pryor, for three years medical director of the Woman's Medical College Hospital of Philadelphia, will enter private practice. She will be succeeded by Dr. Margaret N. Dassell, instructor in roentgenology at the Woman's Medical College.——Dr. Frank B. Skversky has resigned as chief of the clinical laboratory in the bureau of hospitals to enter private practice.

**Magee Memorial Hospital.**—Under the will of Anna J. Magee $2,518,500 is made available to public institutions of the city. For establishing and endowing a general hospital for convalescents, to be known as "The Magee Memorial Hospital for Convalescents," $1,500,000 is provided. All hospitals in Philadelphia may send patients, who no longer require strict hospital attention but who are still too weak to work, to this hospital. Patients will be received without regard to sex, color, nativity or religion. Children under 14 years old and persons having contagious diseases will be excluded. It will be governed by twelve trustees, appointed one each, by the following hospitals: Episcopal, Presbyterian, Methodist, Pennsylvania, University, Lakenau, Jefferson, Woman's, Samaritan, Hahnemann and Germantown. The chief physician of the hospital is to be a member of the board and Dr. James C. Wilson, professor emeritus of the practice of medicine and clinical medicine, Jefferson Medical College, has been nominated the first incumbent. The will directs also that this position shall go in succession to the holder of the chair of medicine at Jefferson. Jefferson College and Hospital will benefit to the extent of $291,000; the University of Pennsylvania, $150,000, and the Pennsylvania and Episcopal hospitals, $100,000 each.

## SOUTH CAROLINA

**Personal.**—Dr. Arthur D. Burnett, for two years city health officer of Greenwood, has resigned.——Dr. John J. Post, Darlington, has resigned as health officer of Darlington County.

## TENNESSEE

**Navy Examining Board.**—By order of Secretary of the Navy Denby, Lieut. Robert H. Snowden and Lieut. Robert W. Wimberly have been ordered to Nashville to physically examine all students of medical colleges in Tennessee who desire to enter the medical corps of the U. S. Navy.

**Child Health Center.**—Dr. Harry S. Mustard, Charleston, S. C., has been appointed director of the child health demonstration work to be undertaken in Rutherford County by the Commonwealth Fund of the American Child Health Association (THE JOURNAL, Sept. 28, 1923, p. 1122), with the cooperation of the state health department. Dr. Mustard has recently been studying the work of the demonstration at Fargo, N. D.

## WASHINGTON

**Hospital Buildings Ready.**—The American Lake Hospital, Tacoma, is expected to be ready for patients in February, according to Dr. Leon M. Wilbor, medical officer in charge of the institution. The hospital was erected at a cost of $1,300,000. The four remaining buildings which have not been accepted by the government are expected to be turned over at once. Staff officers who have already arrived from Washington, D. C., are Dr. Henry E. St. Antoine and Dr. Robert H. Rea.

**North Pacific Surgical Association.**—At the twelfth annual meeting of this association in Seattle, Dec. 7-8, 1923, the following officers were elected: president, Dr. Alpha E. Rockey, Portland, Ore.; vice presidents, Drs. Alvin W. Baird, Portland, and Herbert W. Riggs, Vancouver, B. C., and secretary-treasurer, Dr. Milton G. Sturgis, Seattle. The sum of $250 was appropriated by the association toward the Dr. Kenneth A. J. Mackenzie memorial tablet fund, to be placed in Mackenzie Hall of the University of Oregon Medical School.

## CANAL ZONE

**Medical Association Election.**—At the annual meeting of the association at Ancon, Dec. 14, 1923, the following officers were elected for the ensuing year: president, Dr. John J. Moore, captain, M. C., U. S. Army, Ancon Hospital; vice president, Dr. Kempton P. A. Taylor, Santo Thomas Hospital, Ancon, and secretary-treasurer, Dr. Charles R. Mueller, captain, M. C., U. S. Army, Ancon Hospital.

**Maritime Quarantine Regulations.**—In accord with the policy of using all measures compatible with the health of the Canal Zone which will speed up the clearance of ships, the Panama Canal announces that ships arriving at quarantine after 10 p. m., which desire to coal, may be taken to the fuel docks in quarantine. These ships will receive quarantine inspection at a suitable hour next morning but they must secure permission of the chief quarantine officer and furnish guarantees that no person or thing will leave the ship while in quarantine, and that regulations regarding rat guarding and fending off will be complied with. Masters and surgeons of ships will be required to swear to quarantine declarations. Vessels from clean ports which meet sanitary requirements may be passed without quarantine inspection. This privilege does not extend to vessels from South American ports. A new schedule of tariffs removes charges for night boarding up to 10 p. m. and fixes the charge for fumigation of ships at cost of labor and material plus 10 per cent. Fumigations are done exclusively with cyanogen chlorid, and improvements in liberating this gas and in methods of removing it from ships by compressed air have diminished the time lost while fumigating.

## PORTO RICO

**Medical Association of Porto Rico.**—At the twenty-second annual meeting of the association, held at San Juan, Dec. 14-16, 1923, under the presidency of Dr. A. Martinez Alvarez, the following officers were elected for the ensuing year: president, Dr. Eugenio Fernández Garcia; vice president, Dr. Augustin R. Laugier; secretary, Dr. Ramón M. Suarez, and treasurer, Dr. Manuel Pavia Fernandez. All the new officers are from Santurce.

## CANADA

**Personal.**—Dr. John G. Fitzgerald, University of Toronto, was elected a member of the International Health Board, at a meeting of the Rockefeller Foundation in New York, recently.——Dr. J. J. R. MacLeod of Toronto addressed a meeting of the American Association for the Advancement of Science at Cincinnati, recently.

**Social Hygiene Council.**—The annual meeting of the Canadian Social Hygiene Council was held in Ottawa, Dec. 10-11, 1923; all of the officers were reelected. The Hon. Dr. Forbes E. Godfrey, minister of health, Toronto, gave an address. Additional vice presidents were elected as follows: Dr. William C. Laidlaw, Edmonton; Hon. Dr. Forbes E. Godfrey, Toronto; Dr. Henry E. Young, Victoria. Mrs. Pankhurst was elected a member of the board. Resolutions passed dealt with pernicious literature on news stands throughout Canada; the appointment of a royal commission to investigate the prevalence and mortality arising from venereal disease; the necessity for supporting amateur athletics; measures to ensure the health of those entering marriage and the desirability of more active cooperation on the part of religious bodies in the social hygiene movement.

## GENERAL

**New England Pediatric Society.**—At the annual meeting of the society, Boston, Dec. 14, 1923, the following officers were elected for the ensuing year: president, Dr. Edwin H. Place, Boston; vice president, Dr. George C. King, Fall River, Mass., and secretary-treasurer, Dr. Joseph Garland, Boston.

**New England Surgical Society.**—At the annual meeting of the society in Boston, recently, the following officers were elected for the ensuing year: president, Dr. Fred B. Lund, Boston; vice president, Dr. Frederick B. Sweet, Springfield, Mass.; secretary, Dr. Philemon E. Truesdale, Fall River, Mass., and treasurer, Dr. Peer P. Johnson, Beverly, Mass. The next annual meeting will be held in Hartford, Conn.

**Fund for Research.**—The American Pharmaceutical Association announces that it has available a sum of $450 which will be expended after October 1 for the encouragement of research. Investigators desiring financial aid in their work will communicate, before March 1, with H. V. Arny, chair-

man of the research committee, 115 West Sixty-Eighth Street, New York City, giving their part record and outlining the particular line of work for which the grant is desired.

**American Congress on Internal Medicine.**—The eighth annual clinical session of the American Congress on Internal Medicine will be held in St. Louis, February 18, under the presidency of Dr. Elsworth S. Smith, St. Louis. Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session. Dr. Frank Smithies, Chicago, is secretary-general of the association.

**Senate Committee on "Diploma Mills."**—A subcommittee of the Senate Committee on Education and Labor will meet, January 14, to make arrangements for public hearings on Senator Copeland's resolution on medical "Diploma Mills." At this meeting it will be determined to what extent the committee will conduct its hearings, the nature of such hearings and the persons who will be called on to give testimony. The subcommittee consists of Senators Copeland, New York; Ferris, Michigan, and Dale, Vermont.

**Phi Delta Epsilon.**—The twentieth annual meeting of the Phi Delta Epsilon Medical Fraternity was held in New York, Dec. 26-27, 1923, under the presidency of Dr. Aaron Brown, New York. Grand officers for the year 1924 were elected as follows: grand consul, Dr. Irwin M. Pochapin, Pittsburgh; vice grand consul, Dr. Matthew S. Ersner, Philadelphia; grand chancellor, Dr. Monroe E. Greenberger, New York; grand scribe, Dr. Henry B. Boley, Brooklyn; grand marshal, Dr. Emanuel Stern, New York, and editor-in-chief, Dr. Aaron Brown.

**Thermometer Bill.**—The Bureau of Standards of the Department of Commerce will be required to inspect and test all clinical thermometers, according to the terms of a bill introduced by Senator R. S. Copeland in the U. S. Senate. The bureau will be required to certify as to the correctness of such thermometers and mark them accordingly before they may be shipped in interstate commerce, or to or from a foreign country into the United States. The bill fixes a fine of $200 and makes it a misdemeanor to introduce into any state any clinical thermometer which has not been marked and certified in accordance with the provisions of the proposed law.

**American Proctologists to Convene in London.**—At its recent meeting in Los Angeles the American Proctologic Society voted to hold the first part of its 1924 meeting in New York City where papers will be read, clinics held and executive business disposed of. The society will then go to England in response to the invitation of proctologists in that country and will hold an adjourned meeting in London. The New York meeting will be held June 23-25, at the New York Academy of Medicine and the society will probably sail June 28, arriving in London, July 6 or 7. The trip is not limited to members of the society; any physician in good standing is cordially invited to join the party. For information communicate with Dr. Ralph W. Jackson, 245 Cherry Street, Fall River, Mass. The estimated fare will be a minimum of $130 each way.

**Mental Hygiene Committee.**—Dr. Frankwood E. Williams was reelected medical director of the National Committee for Mental Hygiene at the annual meeting of the board of directors, in New York, Dec. 28, 1923. The following were elected members of the executive committee: Dr. William L. Russell, medical director, Bloomingdale Hospital, White Plains; Dr. Walter E. Fernald, superintendent, Massachusetts School for the Feebleminded, Waverly, Mass.; Stephen P. Duggan, director, Institute of International Education, New York; Dr. William A. White, superintendent, St. Elizabeth's Hospital, Washington, D. C.; Dr. Charles P. Emerson, dean of the Medical School University of Indiana, Indianapolis; Dr. Clarence Floyd Haviland, chairman, state hospital commission, Albany; Dr. Arthur H. Ruggles, superintendent, Butler Hospital, Providence, R. I., and Mr. Matthew C. Fleming, attorney, New York. Dr. William H. Welch, of the National Committee for Mental Hygiene, presided.

**Framingham Demonstration Ends.**—The health demonstration conducted for the last seven years in Framingham, Mass., by the National Tuberculosis Association has ended. This work of research and demonstration in life conservation began in 1917 and was made possible by funds donated by the Metropolitan Life Insurance Company. Framingham was selected for its typical character as a semi-industrial community for studying tuberculosis. The community responded by appropriations for health work and by private and public contributions. Similar demonstrations are now being conducted by the Rockefeller Foundation, the Red Cross, the American Child Health Demonstration and the Milbank and Commonwealth funds in various parts of the country. Dr. Donald B. Armstrong, originator of the enterprise and now with the National Health Council, New York City, was succeeded by Dr. Philip C. Bartlett and Dr. Arthur K. Stone who assumed the responsibility of administration. The basis for health examinations as stressed by the Framingham demonstration has been accepted by the National Tuberculosis Association and the National Health Council and is being widely adopted.

**Druggists' Resolution on Liquors.**—The National Drug Trade Conference, at its annual meeting, Dec. 6, 1923, in Washington, D. C., adopted resolutions protesting against legislation calculated to make the Federal Prohibition Bureau independent of departmental control and the prohibition commissioner responsible only to the President; urging the creation of a narcotic unit in the Internal Revenue Bureau, independent of the prohibition unit; asking that the supervision of legitimate industry employing alcohol as a chemical raw material be divorced from the policing of liquor for medicinal and sacramental purposes and liquor used unlawfully as a beverage; and urging the committee of revision of the United States Pharmacopeia to adopt appropriate standards for whisky and brandy. A resolution was adopted recommending the appointment of an advisory committee on the interpretation of the Food and Drugs Act, 1906, so far as it applies to the drug trade, and a committee was created to discuss with the Secretary of Agriculture recently reported changes in the policy of the Bureau of Chemistry respecting the labeling of medicinal preparations. The conference by resolution urged the continuance of the issue of the Digest of Comments on the United States Pharmacopeia and National Formulary by the U. S. Public Health Service.

**Child Welfare Bill.**—A bill introduced in the House of Representatives by Representative Robert I. Bacon of New York proposes federal cooperation with the states in the extension of physical education for school children. According to this measure, physical education "shall be more fully and thoroughly to prepare the boys and girls of the nation for the duties and responsibilities of citizenship through the development of bodily vigor, and endurance, muscular strength and skill and mental poise." The bill appropriates $5,000,000 to pay supervisors and teachers of physical education; and for the distribution of certain sums to each state provided such state appropriates a like amount from state funds for cooperation with the federal government. Representative Bacon declares that:

> "The bill is so drafted as to provide that each state shall have unrestricted freedom and responsibility to develop without federal interference a physical education program adapted to the local needs. Federal participation is limited to providing a stimulus which will guarantee that the children who are citizens of the nation, as well as the states, shall have as nearly as possible equal opportunity for starting the serious work of life with bodies physically fit.
>
> "The need for a national stimulus is apparent in view of the fact that in spite of local and state action only one child in eight now receives adequate physical education." Mr. Bacon, who served on the Mexican border and in the world war, stated that the physical neglect of children was proved by the fact that one of every three men examined in the draft was disqualified from full military activity because of physical deficiency, and of those accepted, thousands required preliminary physical conditioning before they were ready to receive further training for military activity.

**Annual Congress on Medical Education, Licensure, Public Health and Hospitals.**—The annual Congress on Medical Education, Licensure, Public Health and Hospitals will be held at the Congress Hotel, Chicago, March 3-5, under the auspices of the Council on Medical Education and Hospitals of the American Medical Association. Other organizations participating are the Association of American Medical Colleges, the Federation of State Medical Boards of the United States and the American Conference on Hospital Service. Monday, March 3, will be devoted to papers dealing with medical education, including undergraduate and graduate or postgraduate medical work. In addition to remarks by the chairman of the Council, and a brief report by the secretary, the program will be as follows:

Function of the University Medical School, Dr. Ernest D. Burton, President, University of Chicago.
Medical Education in America and Europe, 1909-1924, Mr. Abraham Flexner, Secretary of the General Education Board, New York City.
The Medical Curriculum, Dr. Harvey Cushing, Professor of Surgery, Harvard Medical School, Boston.
Clinical Specialties in the Undergraduate Medical School, Report of a Special Committee by the Chairman, Dr. George E. De Schweinitz, Professor of Ophthalmology, University of Pennsylvania School of Medicine, Philadelphia.
A Symposium on Extension Graduate Medical Education for Physicians in Active Practice. (*a*) Certain Principles and Plans in University Extension Postgraduate Medical Instruction, Dr. George H. Meeker, dean of the University of Pennsylvania Graduate School of Medicine, Philadelphia. (*b*) Experiences in Extension Medical Teaching of the University of North Carolina School of Medicine by the dean, Dr. I. H. Manning, Chapel Hill. (*c*) Extension Medical Teaching

for Graduates. Dr. Ethan Flagg Butler, of the Robert Packer Hospital, Sayre, Pennsylvania.
Relations Between Medical and Dental Education, Dr. Henry L. Banzhaf, Dean, Marquette University School of Dentistry, Milwaukee.
The Course in Preventive Medicine as Developed in the Medical Department of the University of Georgia, by the Assistant Dean, Dr. Eliot R. Clark, Augusta.
Medical Education and Culture, Dr. Stephen Rushmore, Dean, Tufts College Medical School, Boston.

Tuesday, March 4, will be devoted to a discussion of medical licensure. The program will be:

Protection of the Public Against Incompetent Doctors, Dr. Stanley H. Osborn, State Health Commissioner, Hartford, Connecticut.
Public Benefits from Recent Improvements in Medical Education, Dr. Henry S. Pritchett, President, Carnegie Foundation for the Advancement of Teaching, New York City.
Present Opportunities for Medical Study in the United States, Dr. Henry W. Briggs, Secretary, Medical Council of Delaware, Wilmington.
Inferior Medical Teaching Institutions, Dr. Charles E. Prior, Secretary, Massachusetts State Board of Registration in Medicine, Boston.
Qualifications of the Medical Examiner, Dr. W. S. Leathers, Secretary, Mississippi State Board of Health, Jackson.
Regulation by Law of the Occupation of Healing Diseases of Human Beings, Harry Eugene Kelly of the Chicago Bar.

Wednesday, March 5, will be devoted to papers dealing with hospitals and public health. In the forenoon the American Conference on Hospital Service will present three papers dealing with hospital efficiency, and two reports on hospital work as follows:

The Factors Which Indicate Professional Efficiency of the Hospital, Dr. Ernest A. Codman, Boston.
The Measures Which Indicate Efficiency in Hospital Administration, Dr. Malcolm T. MacEachern, Associate Director, American College of Surgeons, Chicago.
The Relationship of Autopsy Percentage to Hospital Professional Efficiency, Dr. L. Hektoen, Director, John McCormick Memorial Institute for Infectious Diseases and of the Annie Durand Hospital, Chicago.
Present Demand for Interns and Possible Use by Hospitals of Non-medical Clinical Assistants and Laboratory Technicians, Mr. Homer F. Sanger of the Council on Medical Education and Hospitals.
Annual Report of the Hospital Library and Service Bureau of the American Conference on Hospital Service by Miss Donelda R. Hamlin, Director of the Library.

In the afternoon papers will be given dealing with public health and hygiene. The program is:

Brief Report of the Work of the Bureau of Health and Public Instruction of the American Medical Association. Dr. John M. Dodson, Director of the Bureau.
Symposium on Periodic Examinations of the Apparently Healthy.
(*a*) Outpatient Clinic or Periodic Health Examinations and Education of Medical Students for this Service, Dr. L. S. Schmitt, Acting Dean, University of California Medical School, San Francisco.
(*b*) Education of the Public as to the Value of Health Examinations, Dr. B. L. Bryant, Secretary, Maine State Medical Society, Bangor.
Discussion to be opened by Dr. Haven Emerson, New York City.
Organization and Experiences of the School of Hygiene at the University of Pennsylvania, by the Director, Dr. A. C. Abbott.

## LATIN AMERICA

**Appeal for Surgeon in Guatemala.**—The Presbyterian Mission at Guatemala asks that some American surgeon volunteer for service at the Guatemala station where the staff is unable to cope with the demands on the hospital. Dr. Charles A. Ainslie is at present working there.

**Chile to Train Health Officers.**—The *Reforma Médica* of Lima mentions that the budget of the treasury department for 1924 contains an appropriation of 96,000 pesos to defray the expenses of sending young physicians, selected by competitive examination, to take a course of training in public health work in foreign countries. The president's address also devoted considerable space to the question of trained nurses, and the two schools for training nurses at Santiago and Valparaiso.

## FOREIGN

**Society Elections.**—The Académie de médecine at Paris recently elected Dr. Barrier of the veterinary department vice president, which automatically makes him president-elect for the year following. Chauffard is succeeded by Doléris in the presidency for 1924.

**International Congress of Industrial Health.**—A meeting of Swiss medical men was held at Berne in October, 1923, and the Swiss Organizing Committee formed for an International Congress on Industrial Health. The first congress will be held at Geneva, July 18-20, and will deal with the following questions: Industrial lighting and eye-strain; impure air in factories; value of fatigue tests. The committee consists of Drs. von Gonzonbach, Silberschmidt, Zangger, Rossi, Carrière and Cristiani (chairman) and has headquarters at the Institut d'Hygiène, University of Geneva.

**Curie Foundation.**—At the celebration of the twenty-fifth anniversary of the discovery of radium at the Sorbonne, Paris, Dec. 26, 1923, the Curie Foundation for the practical application of radium in cancer therapy was officially inaugurated. Madame Curie has donated the gram of radium given her by the committee of American women to the institution, from which no one, including herself, will derive any pecuniary benefit. Rich and poor will be treated alike regardless of their ability to pay. Any money obtained from treatment will be put back into the foundation to increase its facilities. The French legislature has granted Madame Curie an annual pension of 40,000 francs, half of which will revert to her two daughters.

**Hospitals Destroyed in Japan.**—It is reported that out of 236 hospitals in Tokyo, 137 of twenty beds or more were destroyed by the earthquake and fire in September, 1923. A recent estimate of the ninety-nine hospitals still standing gives the beds available at 8,559. Greater Tokyo has a population of approximately 4,500,000. The total number of dead, according to the latest government statistics, is about 130,000, and the number of people still missing and unaccounted for is about 120,000. The municipal authorities have decided to enlarge the hospitals at Okubo and Hirowo following the outbreak of some 1,900 epidemic cases, mostly dysentery, and have established thirty-seven relief stations in different parts of the city.

**Personal.**—Our Vienna exchanges mention that Prof. O. Frankl has been elected an honorary member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.——Prof. M. Lemos was the guest of honor at a banquet tendered recently by the medical department of the University of Oporto, on his retirement from the chair of history of medicine.——Dr. George Chapman of Birmingham, England, celebrated his one hundredth birthday in November.——Prof. G. Bosch Arana of Buenos Aires, now visiting in Europe, was invited to address the Paris medical school on "Kineplastic Amputations," and illustrated his lecture with moving pictures. Dr. Cabanès delivered an address, Dec. 12, 1923, on "Medical Journalism and Advertising."——Dr. Pedro Cifuentes was recently elected president of the Academia Médico-Quirurgica at Madrid. The *Medicina Ibera* states that the annual prize of the Academia was awarded to Dr. Pérez Petinto for his work on "Fractures of the Skull."——Prof. Alexander Mair, of the University of Liverpool, England, has been elected president, and Dr. Betts Taplin, vice president, of the newly organized Liverpool Psychological Society.——Sir Charles Scott Sherrington has been appointed correspondent of the medical and surgical section of the French Academy of Science, as successor of Sir Patrick Manson, deceased.——Dr. Henry L. Heimann, London, England, has been appointed medical registrar at the Johannesburg (South Africa) General Hospital.——The resignation on account of ill health of the chief of the public health service in Spain, Dr. Martin Salazar, has been accepted, and his assistant, Dr. F. Murillo y Palacios, has been appointed to the post.——Dr. R. Bárány, who is now professor of otology, rhinology and laryngology at Upsala, delivered a lecture recently at Zaragoza on "Surgery of the Cerebellum and Labyrinth."——A fund is being collected for an endowment in honor of Angelo Mosso, emeritus professor of physiology at Turin, founder of the Monte Rosa laboratory for research on effect of altitude. The endowment is to benefit students and war orphans.——Sir Auckland Geddes, M.D., has resigned as British ambassador to the United States at Washington, D. C.——Dr. Louisa Helena Hart, an American physician, has been awarded the Kaisar Hind Medal by the King of England for services in India. Dr. Hart is in charge of the Mary Lott Lyles Hospital, Chittur, Madras.

### Deaths in Other Countries

Sir **John Tweedy**, emeritus professor of ophthalmic medicine and surgery at University College, London, and former president of the Royal College of Surgeons, the Ophthalmological Society of the United Kingdom, the Medico-Legal Society, the Medical Defense Union and the Royal Medical Benevolent Fund; died suddenly, January 4, aged 72.——Dr. **K. Rudberg**, retired surgeon general of the Swedish navy, honorary member of the Association of the Military Surgeons of the United States, aged 71. He served on the *Iroquois* and the *Relief* during the Spanish-American War.——Dr. **A. N. Afzelius**, Stockholm, one of the founders of the Northern Dermatologic Society, aged 66.——Dr. **E. Kleen**, author of works on diabetes, and the "Ströftåg hos min vän Yankee Doodle," aged 76.——Dr. **Hilario de Gouvêa**, emeritus professor of ear, nose and throat disease, at Rio de Janeiro.——Dr. **J. Lermoyez**, intern of the Paris hospitals, son of Dr. M. Lermoyez, one of the pioneers in laryngology in France and an editor of the *Presse médicale*.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

Dec. 17, 1923.

### The Neglect of Vaccination

This table, recently published, shows the increasing extent of the neglect of vaccination in London:

| Year | Births | Vaccinated |
|---|---|---|
| 1913 | 111,813 | 54,052 |
| 1914 | 111,179 | 50,937 |
| 1915 | 103,888 | 49,820 |
| 1916 | 101,336 | 47,998 |
| 1917 | 82,746 | 37,776 |
| 1918 | 73,051 | 33,356 |
| 1919 | 85,193 | 38,379 |
| 1920 | 123,196 | 56,120 |
| 1921 | 102,092 | 43,947 |
| 1922 | 96,472 | ..... |

The vaccination figures for 1922 are not yet available. Of thirteen cases of smallpox admitted to hospital from London in the autumn of 1923 two were fatal. In one, the patient was an unvaccinated woman of 28, and in the other a man of 50, who had been vaccinated only in infancy. Of the eleven patients who recovered, three were unvaccinated. The table shows that considerably less than half the London children are now vaccinated, and there is no reason to suppose that the condition is any better in the country generally. Indeed, some parts are known to be worse. The dangers of this condition have been foretold. Thanks to other methods of prevention, such as prompt isolation and the vaccination of contacts, we have so far escaped a great epidemic. But that of Gloucester, an antivaccination hotbed, is a warning, and there are many others, though on a lesser scale. Minor outbreaks of smallpox are now of constant occurrence. The average number of cases fresh each week has risen from nineteen in 1922 to forty-six in the present year. The disease is now virtually endemic in some areas of the North and the Midlands. So far the virulence has been low. No fewer than eighty-nine cases of smallpox were notified in England and Wales last week.

### Neglect Under the Panel System

A case has occurred which has led to further strictures on the panel system by a London coroner, Dr. Edwin Smith, whose previous ones were reported in THE JOURNAL and were much resented by those defending the system. A man died from pulmonary hemorrhage, and an inquest was held. The government pathologist, Dr. R. M. Bronte, gave evidence that the cause was pulmonary tuberculosis, which an examination three months before should have revealed. The man, according to his widow, had been seen two or three times by his panel physician, who told him that his lungs were all right. Summoned to the inquest, the physician said that he did not remember the case at all. He imagined that the man's symptoms must have been vague, as he had entered on the paper that he was suffering from nervous debility. If the symptoms of tuberculosis had been marked, he would have found them. The coroner (himself a physician) said that he was aware that a physician's position would be intolerable were he assailed by critics whenever he happened to overlook the existence of a disease. But he was bound to say that it was very regrettable that in this case neither was the disease detected nor was the case followed up in any way, although the deceased obviously was a very sick man when he went to the physician. He was wasting, coughing, and sweating at night—a very significant combination of symptoms. It was not impossible that his fate might have befallen a private patient, but such occurrences were far more likely to happen under a system of contract practice. The great extension of contract medical attendance under the insurance act was largely responsible for the overlooking of disease. The coroner thought that if, in the reviewing of the panel system, which was about to take place, a system of payment for the attendance given were introduced, much good would result.

### Breeding from the Worst Stock

That trenchant and outspoken thinker, the dean of St. Paul's, Dr. Inge, in a lecture on "National Decay and Regeneration" pointed out that in each generation the cream of all classes is skimmed off, raised to a better social position, and there sterilized. The lowest birth rates at present are those of physicians, ministers of religion and teachers. If it were the skilled workman who filled the cradles there would be less cause for alarm. But it is the slum dweller, the untaxed dole receiver, who is producing more than his share of the next generation. The highest birth rate of all is that of the feebleminded. Civilization, the dean considers, has brought with it an arrest in human evolution. Even in brains, man makes no further progress. What we call progress is the result of accumulated experience. There has always been in England a large class of submen—beggars and wastrels—who were outside the social system, but the enormous death rate of the towns kept them down. They were not subsidized and encouraged to multiply as they are today. The unexampled decline in the death rate due partly to sanitation and medical skill, but partly also to adaptation to town life. has created the menacing problem of overpopulation. The decline of the birth rate has prevented a social revolution, but it has not gone far enough to remove the danger. This decline in itself is dangerous because it is steadily impairing the quality of the population.

### Representation of Members in the Royal College of Surgeons

The Royal College of Surgeons is governed by the council, which is elected by the fellows. The fellowship is obtained by passing a severe examination, and is sought only by the superior class whose ambition is to become surgeons in the strict sense of the term. The F.R.C.S. is the hall-mark of British surgery. The number of fellows is about 1,700. On the other hand, the college has a roll of members who number 16,000. For the membership (M.R.C.S.) there is a much more elementary examination, which is taken by those who go into general practice and who, as a rule, practice medicine, with a little minor surgery. A section of the members has for some years shown resentment at the fact that they have no part in the election of the council and therefore in the government of the college. They formed a society to promote their views, which for thirty-five years has taken advantage of the annual meeting at the college of the fellows and members to make a protest. This year they passed the usual resolution affirming the desirability of admitting members to direct representation on the council. They passed a resolution asking the president of the college (Sir John Bland-Sutton), who presided at the meeting, to make a statement as to the difficulties of bringing about this reform. He pointed out that under the charter of the college the fellows are the electorate and any member can become a fellow by passing the requisite examination. He also pointed out that although the members number 16,000, yet at the annual meeting there is difficulty in obtaining a quorum of thirty. The college was incorporated for promoting the art and science of surgery. Its prime duty was to take care that those who became members should be properly educated, in order to protect the public from inefficiency. The college maintained a well stocked and well arranged library and a convenient reading room for the members and fellows. The membership

was in great demand, and its value as a standard of ability was recognized throughout the world. The council regarded the changes advocated as arising from a mistaken view of the functions of the college. The last statement of the president evidently referred to the opinion, often expressed by the discontented members, that the college should take part in medical politics. But this function is fully discharged by the British Medical Association, and the stand taken by the council in confining the activities of the college to scientific and educational work is to be commended both in the interests of surgery and of the public. The electorate of fellows is the very cream of the surgical profession and is no narrow oligarchy, such as Wakley thundered against, but open to all who have the ability to enter.

### Gift by Rockefeller to Edinburgh

A gift of $250,000 has been made to Edinburgh University by the trustees of the Rockefeller Foundation for the fuller equipment of the university on the medical side. The money will be used for the erection of a clinical laboratory and also for the completion of the endowment of the professorship of surgery on a full-time basis. The trustees have also offered an annual grant of $8,750 for at least five years to meet certain salary charges in clinical medicine and surgery. In their communication to the university, the trustees stated that the proposals for cooperation for the rearrangement of the departments of medicine and surgery had been presented by Dr. Richard W. Pearce, the director of the division of medical education of the Rockefeller Foundation, and approved.

### Clinic for Plastic Surgery

The first clinic to be devoted to plastic surgery, particularly the treatment of facial deformities, has been opened in London, under the charge of Major H. D. Gillies, whose reputation in this branch was made by his works during and after the war. No profits will be made by the institution, which is housed in St. Andrew's Hospital, Dollis Hill. Sculptors, artists and dentists will give their aid to the work. Lectures and conferences will be arranged for surgeons and students, so that the lessons of facial surgery learned in the war can be more generally applied.

## PARIS

*(From Our Regular Correspondent)*

Dec. 21, 1923.

### Inconsiderate Use of New Drugs

Dr. A. Richaud, professor of therapeutics and pharmacology at the Faculté de médecine of Paris, has published in the current number of the *Journal de médecine et de chirurgie pratiques* an instructive article on the inconsiderate use of new drugs. After recalling that the misuse of new drugs had recently been the subject of severe criticism at the hands of Professor Arnozan of Bordeaux, Dr. Damey (THE JOURNAL, Feb. 10, 1923, p. 417, and Feb. 24, 1923, p. 566) and Dr. L. Cheinisse, Richaud expresses himself thus: "That a clinical professor, a practitioner and a medical journalist have, within a few months, been impelled to speak or write on this subject, is pretty good evidence that the misuse is real; that it is not without danger, and that there may be cause for alarm."

Quoting from the information that Cheinisse recently gave in the *Presse médicale* on the mode of functioning of the Council on Pharmacy and Chemistry of the American Medical Association and on the strict rules adopted by the Council governing the admission of proprietary articles to the book New and Nonofficial Remedies, Richaud supported the view that a similar organization in France would doubtless be of inestimable service, if it accomplished nothing more than to place a barrier in the way of a vast number of products that possess no therapeutic value, and to prevent the introduction of at least the secret remedies which, although formally prohibited by law, have nevertheless a certain legal existence owing to the wrongful application of certain revenue laws by which a special tax is imposed on them.

There is another radical way of fighting secret remedies; namely, by prohibiting their advertisement. But since such advertisements are a great source of revenue to the large political dailies and medical journals, we cannot hope to secure the needed legislation; for, in spite of the hygienic advantages it would bring, in the eyes of parliament it would appear objectionable because it would injure important private interests.

Richaud raises the question why many physicians pay so much attention to the numerous advertisements received through the mails or contained in the medical journals. He thinks there are doubtless many reasons, but holds that one principal reason is that, not being sufficiently familiar with prescription writing, the younger and less experienced members of the profesion fear that some day or other they will make a serious mistake which will reflect on their professional reputation or even place them in an embarrassing situation. By prescribing Smith's elixir and Jones' pills, they argue fallaciously, they will have the best protection against accidents. But, it may be objected, in every medical school courses and rigorous examination are given in therapeutics and pharmacology. Yes, that is true, Richaud replies, but these theoretical courses are not sufficient. Fifth year students ought to be afforded an opportunity, in a hospital, to apply or to see applied the ideas, necessarily somewhat theoretical, that they have acquired in the courses on therapeutics and pharmacology. Unfortunately, in too many services, therapeutics are regarded as of secondary importance; or, if the matter receives attention, as likely as not recourse will be had to some one of the horde of new remedies which pharmaceutical manufacturers supply to the services in such liberal quantities. The hospital, therefore, is frequently not the "great school of application" that it should be; this is much to be regretted, for it is in the hospital especially that the young physician acquires so easily the fixed habit of prescribing the "specialties" recommended by the countless journals, pamphlets, postal cards and blotters that he receives daily. Yet, Richaud continues, such action constitutes on the part of a physician an abdication of his rights and privileges, and it is surprising to note such tendencies and manifestations in a body which, in general, is jealous (and rightly so) of its prerogatives. Whether he is willing to admit it or not, the physician who prescribes secret remedies is not practicing therapeutics. It is not he who chooses the remedy for the disease or symptom; he is merely the tool of the therapeutic fancies of the manufacturer of pharmaceuticals. He accepts with absolute submission the most improbable theories and statements as to the mode of action supplied by the manufacturer.

E. Fourneau, a chemist and department head in the Pasteur Institute, who was the discoverer of stovain, has published recently in the journal *Chimie et Industrie* an article on the general organization of chemotherapeutic research, which he thinks is needed in France. Speaking of certain chemical drugs and so-called specialties, he says, in regard to the latter: "We are witnesses, at the present time, of a most regrettable and most dangerous movement. For a number of years the general public and physicians have been bombarded with so-called new remedies, which are in reality mixtures of well known drugs, the components being carefully concealed. These remedies are given a new name with a scientific appearance but of no descriptive value, so that

it is impossible to know, from merely reading the label on the container, whether the remedy is new or simply a mixture of old, well known substances. Some time ago, an analgesic hypnotic was extensively advertised which, it was asserted, possessed the truly wonderful property of being analgesic when taken in a glass of cold water and hypnotic if taken in warm water; it proved to be a simple, more or less alcoholized mixture of barbital and antipyrin." This product was presented, however, as a new substance; to it was ascribed a chemical formula and the properties of a specific substance. Again, two local anesthetics were recently put on the market and were advertised as new and superior to drugs previously in use. One of these proved to be the well known mixture of quinin and urea; the other was nothing but stovain.

Fourneau holds that if a manufacturer of specialties does not state the composition of the remedies that he puts on the market, or at least the active principles that they contain, there is evident intention to defraud, which should be prosecuted in our courts of law.

### A Medicoliterary Journal

The publishing house of Bernard Grasset is planning to put out shortly a weekly journal which will bear the title *Le dimanche médical* and which will endeavor to reflect for the medical profession the literary life of France and of foreign countries. Grasset states that, during his career as publisher, he has had occasion to observe that it is chiefly among the medical profession, in France, that is found the element which has an interest in literature and in intellectual things generally; so that the subscribers to literary reviews and the contributors to collections are at least one third physicians. He holds that the majority of the outstanding ideas and movements of a given epoch are in some way connected with medicine, and that literary criticism particularly takes on peculiar value if it is based on the solid foundation of psychology and general science.

### The Seventieth Birthday of Dr. E. Roux

The seventieth birthday anniversary of Dr. Roux, director of the Pasteur Institute, was celebrated, December 17, in the library of the Pasteur Institute by ceremonies which out of respect for the wishes of the great scientist were very modest in character. All collaborators of Roux were present, together with his pupils and friends. M. Vallery-Radot and Dr. Calmette reviewed the active life that Roux has led and referred to the many things for which science and medicine are indebted to him. Dr. Roux thanked his friends for their kind words, and very modestly ascribed the larger share of merit to his collaborators, in which connection he called to mind the names of those with whom he worked alongside of Pasteur; namely, Chamberland, Duclaux, Nocard and Metchnikoff. He spoke exaltingly of laboratory work in general; of the joys of scientific labor not dictated by private advantage, and of the untold satisfaction to be found in research and discovery. At the last meeting of the Academy of Medicine, Professor Chauffard, president of the academy, took occasion to refer in a few words to the celebration of Dr. Roux' seventieth birthday.

### National Aid in Social Work

Under the name of L'aide nationale aux oeuvres sociales, a committee has been formed under the chairmanship of Marshal Joffre for the avowed purpose of collecting a reserve fund with which to help such societies as have not sufficient means to justify them in making a direct appeal to the public, and to aid more important societies that have not been able to secure the funds necessary for their budgets. The committee desires to create also an emergency fund which, in case of a great disaster in France or in some foreign country, might be drawn on immediately for the distribution of aid, which would be doubly welcome for the reason that it would be prompt.

Just at this moment, the most pressing need is in connection with infant mortality. Basing his statements on comprehensive documents, Prof. Léon Bernard showed the imperious necessity that existed for France to wage a bitter fight against infant mortality and to minimize the ravages of tuberculosis. Without interfering in any way with the work of existing societies, the committee so formed wishes rather to cooperate with other organizations by furnishing them supplementary funds with which to carry on their activities.

### Personal

The Academy of Medicine has appointed its official board for the year 1924. Dr. Doléris, vice president, becomes president of the academy. M. Gustave Barrier, formerly professor of anatomy and director of the veterinary school at Alfort, was elected vice president (president-elect for 1925). It is the first time since 1877 that the Academy of Medicine has elected a member of the section of veterinary medicine to preside over it. Dr. Souques was reelected annual secretary by acclamation.

### Congress of Legal Medicine

The next congress of Legal Medicine of French-Speaking Countries will be held in Paris, in May, 1924, under the chairmanship of Dr. Vallon of Paris. The three main subjects on the program are: (1) A medicolegal study on rare and abnormal forms of the hymen, by Prof. Pierre Parisot of Nancy and Dr. Lucien of Nancy; (2) tabes in relation to industrial accidents, by Professor Verger of Bordeaux and Dr. Lande of Bordeaux, and (3) the management of criminals in penitentiaries, by Dr. Vervaeck of Brussels.

### Association for the Development of Medical Relations Between France and Allied Countries

The general assembly of the Association for the Development of Medical Relations Between France and Allied Countries, founded in 1920, has just been held at the Faculté de médecine, under the chairmanship of Dean Roger. Professor Hartmann, president of the association, gave an account of the work accomplished during the year just closed. A bureau has been created, this past year, under the auspices of the minister of foreign affairs and the minister of public instruction. This bureau of medical relations with foreign countries is combined with the association. The work of the association has also been extended. It conducts an information bureau where a physician spending a short time in Paris may secure not only information in regard to medical instruction at and outside the university but also information about lodgings, etc. More than 600 physicians had requested information by letter, and 551 had called in person. Taking advantage of Professor Segura's coming to Paris, from Buenos Aires, the association succeeded in establishing the foundations of a Franco-Argentine medical association, for which purpose 1,500,000 francs has been subscribed by the members of the Argentine colony. With the money so subscribed it is planned to erect a pavilion for Argentine students in the so-called University City. The association has resumed relations with Russian physicians and has given its patronage to a society formed in Moscow to promote relations with French physicians. It has also entered into relations with the Maison des savants russes at Petrograd to aid Russian physicians in the purchase in France of books, drugs and even of clothing. It has also brought about the establishment at Paris of a club of American physicians and students. In closing, Hartmann emphasized the need of coordinating the graduate courses that are now being given, in order that foreigners may, within a short space of time, attend all courses that interest them.

## PRAGUE

*(From Our Regular Correspondent)*

Dec. 10, 1923.

### Sanitary and Public Health Conditions

Dr. Ladislav Procházka, chief health officer of the city of Prague, described recently the sanitary and public health conditions of the capital of the Czechoslovak republic before the newly elected council of Greater Prague. The crude death rate for the city in the year 1922 was favorable, amounting to 12.24 per thousand. When this death rate is analyzed, one can readily see that there are still great prospects open for its further reduction. Tuberculosis, which has declined enormously since the close of the World War, still causes 16 per cent. of all deaths. There are districts in which 20 per cent. of all deaths are due to tuberculosis. Dr. Procházka sees the chief reason for the high incidence of tuberculosis in the bad housing conditions in the city, which has witnessed a considerable increase of population without providing the necessary housing facilities. Also, the infant mortality, which ranges in different districts from 130 to 250, can be decreased to a large extent; it has already been shown in some districts that an efficient child welfare center has reduced largely the mortality among children. The city shows a favorable record in the incidence of contagious diseases. It would be a great menace to the city if the famine in Germany resulting from the economic collapse should be followed by epidemics, as in Russia. Typhoid is still a problem for Greater Prague. The city proper, which has an excellent water supply, is virtually without typhoid; but the communities that have been included in the boundaries of Greater Prague have a high incidence of this disease, owing to the unhygienic water supply. In order to remedy this condition, the city is building an additional filtration plant. The approach to ideal conditions will still require the expenditure of large sums of money, because the machinery of the health department, which was organized for a population of 200,000, has now to serve 700,000 inhabitants.

### Death of Mrázek

Prof. Alois Mrázek died in Prague, November 27. He was professor of zoology at the Prague University, and was one of the outstanding figures in university circles. Born in Pribram in 1868, he had been connected with the institute of zoology since 1898 in the capacity of instructor, assistant professor and, finally, director. He was a corresponding member of numerous foreign scientific bodies, and was an authority on tapeworms. With his former chief and teacher, the late Prof. V. Vejdovsky, he made important contributions to the solution of the rôle of the centrosome. He was preparing a large publication, "General and Systematic Zoology," which was interrupted by his sudden death. He was well known by the students, for whom he always showed considerable interest and understanding.

### Compulsory Vaccination

The ministry of health has issued a supplementary decree to the law on compulsory vaccination of employees of railroads and the mail service. The decree makes it the duty of the administrative heads to make special lists of employees showing the date of the last successful vaccination against smallpox. From these lists must be drawn each year the names of those who will complete the fifth year since their last successful vaccination. These names must be sent to the railroad physicians, who must vaccinate the employees before the end of the month of August. This measure was instituted to relieve the district health officers who carry out the vaccination and revaccination of the general public, and to enforce the law more effectively among this class of the population, which would be an important source for the spread of infection in case of an epidemic.

### Insulin Therapy

The Association of Czechoslovak Physicians recently devoted two sessions to the insulin therapy of diabetes. A large number of foreign preparations are being imported, and there is also a local product on sale. The representatives of the internal medicine clinics presented their experiences with the different preparations. The best results were obtained with European preparations. The preparation from Toronto did not give satisfactory results, probably on account of difficulties with transportation. The local preparation, which is being prepared under the name Pankreashormon Norgine by a local factory under the direction of Prof. E. Wiechowski, is not yet sufficiently effective. Physicians were urged to proceed carefully with the administration of insulin in order to avoid possible harm to their patients.

### Query Antisyphilitic Serum

An effort is being made to spread in the Czechoslovak republic the use of the antisyphilitic serum of Dr. Query. This is a French preparation which is supposed to be derived from monkeys vaccinated with the "bacillus of syphilis." Because the advocates of this serum forbid their patients the use of the officially recognized remedies against the disease, and recommend waiting, after the use of the serum, for the later manifestations of syphilis, this preparation is becoming a serious menace to public health. The advocates of the Query therapy, foreigners apparently paid by the manufacturers, do not hesitate to attack even the professors of venerology who have pronounced themselves against the use of this nostrum. A recent controversy between Prof. A. Tryb of the Brno Medical School and Dr. Query in the daily papers is an illustration of the facts.

## BERLIN

*(From Our Regular Correspondent)*

Dec. 22, 1923.

### Physicians and the Health Insurance Societies

The negotiations in the federal ministry of labor, Dec. 21, 1923, to which I referred in my letter last week, seem to be paving the way to an understanding. As impartial members of the federal committee for the arbitration of difficulties existing between physicians and the health insurance societies, a number of officials have been selected in whom the physicians have expressed confidence. The representatives of the two groups have agreed that petitions for the modification of the decree concerning the form of aid to be given members of the health insurance societies may be dealt with by the federal committee. As a basis for the settlement of the controversy, the following points were regarded as essential: The physicians and the health insurance societies must not demand that disciplinary measures be taken against persons who, during the period since the cancelation of the contract, have committed acts in violation of previous agreements; furthermore, all lawsuits arising out of the disturbed relations shall be withdrawn. It is also expected that an understanding will be reached in regard to violations of the law with respect to the payment of minimal fees. The representatives of the health insurance societies will, not later than Dec. 30, 1923, report the decision of their members with reference to the restoration of the former agreements with physicians. Until then the status quo, with the contract between the two parties held in abeyance, will be maintained. As formerly, under especially difficult circumstances, a reduction in medical fees will be granted. The federal committee will soon hold a meeting to effect a settlement between the contending parties.

### Meat Consumption in Germany

According to a statistical report recently issued by the federal public health bureau, the total quantity of meat

imported per person in 1913 was 3.27 kilograms; 1919, 4.55 kg.; 1920, 5.53 kg.; 1922, 3.16 kg., and in the first half of 1923, 2.11 kg. If to the importations we add the total amount of meat furnished by the domestic abattoirs, we get as the total amount of meat consumed per person in 1913, 40.26 kg.; 1919, 16.67 kg.; 1920, 18.16 kg.; 1921, 25.41 kg.; 1922, 24.98 kg., and for the first half of 1923, 10.33 kg.

### Drugs Procurable Only in Drug Stores

By a decree dating from the year 1921, two lists were drawn up of drugs which may be procured only in drug stores, it being declared a penal offense for them to be offered for sale elsewhere. By a recent decree of the president, two further drugs have been added to these lists: fructus papaveris maturi ad usum humani and oil of chenopodium. With regard to the toxicity of the latter, I may refer to the statement in a previous letter (THE JOURNAL, Dec. 22, 1923, p. 2130).

### Roentgen Memorials

As memorials to Roentgen, the University of Würzburg has founded a Roentgen Museum and has also erected a bust of the famous scientist in the auditorium of the Physical Institute, where he announced, Jan. 29, 1896, his discovery of the roentgen rays. The magistracy has also named a street "Roentgen Ring" (Roentgen Boulevard).

### Effect on the Stomach of Different Breakfasts

In a recent number of the *Klinische Wochenschrift*, Professor Kestner, head of the department of physiology in the University of Hamburg, published the results of his researches on the effects on the digestive organs of the various foods and beverages customarily used for breakfast in Germany. The sensation that is produced by the ingestion of an article of food is determined by the effect it exerts on the digestive organs. If a food stimulates gastric secretion, it produces a feeling of refreshment, since, through the secretion of hydrochloric acid, acid radicals are withdrawn from the blood, and the reaction of the blood becomes more alkaline. This change in reaction, Kestner states, causes a pleasant, refreshing sensation. As regards any food ingested, the time of its stay in the stomach plays an important part. So long as the stomach is filled, provided it is not abnormally distended, we are not aware of its presence; but if it becomes empty, there arise, from time to time, sensations of hunger, which are sometimes associated with feelings of pain. In the last analysis, man eats to please his stomach, and to keep it in a good mood, although, under normal conditions, the needs of the stomach coincide with the requirements of the organism as a whole. If we think of those articles of diet that have no caloric value, certain luxuries or relishes, it is evident that their value depends entirely on the effect they produce on the stomach and intestine, or possibly on the central nervous system also. In this connection, Kestner considers especially tea, coffee and coco, since they are widely used in all civilized countries. In considering the effect of these substances on the digestive tract, attention must be paid to the percentage of caffein or theobromin. The effects of caffein on the nervous system are well known. With the action of theobromin we are less familiar. Tea contains only traces of caffein; the coffee bean is rich in caffein, but very small quantities of pure coffee are used at present in Germany, substitutes such as barley or malt "coffee" being more frequently employed. Since these substitutes contain no caffein, the effect of "coffee" made therefrom on the stomach and intestine cannot be due to caffein. Experiments with dogs have shown that all three beverages, tea, coffee and coco, exert a considerable effect on the secretion of digestive juices and also that they remain long in the stomach. These are the effects that have made tea, coffee and coco favorite breakfast beverages. At the beginning of the day's work, they exert a marked deacidifying effect on the gastric secretion. Coffee made from the genuine coffee bean and coffee made from substitutes have much the same effect on the stomach, which accounts for the ease with which the coffee bean has been replaced by other substances. The coffee bean, the coffee substitutes and coco have in common the fact that they are subjected to roasting. It is therefore natural to suppose that products resulting from the roasting process in each case constitute the real stimulant for the stomach. As regards coco, the conditions are somewhat more complicated, since the various brands on the market vary considerably in their fat content. Fat has an inhibitory effect on the secretion of gastric juice, so that it is easy to understand why various cocos with varying fat content differ in the effect they produce on the stomach. According to Kestner, the most refreshing beverages and those having the most marked deacidifying effect are made from the brands having the smallest fat content. The addition of fine flour to coco, it has been noted, will serve to check gastric secretion. Since the feeling of satiety runs parallel with the amount of digestive juices produced, the subjective sense of sufficiency would naturally be less after the ingestion of the brands richer in fat. But fat introduced into the stomach exerts another effect. It lessens gastric motility, so that the contents of the stomach remain longer in that organ. This longer stay in the stomach enhances, furthermore, the satisfying effect, so that in this respect the fat-poor and the fat-rich brands of coco do not differ, ultimately. The heated controversy that has been waged over the respective value of fat-poor and fat-rich brands of coco was, from this angle at least, which is the main consideration from a practical standpoint, entirely superfluous.

### The Accademia Leonardo da Vinci

A few months ago, the *Münchener medizinische Wochenschrift* announced that Professor Sauerbruch, a surgeon on the medical faculty of the University of Munich, had been made a member of the Accademia Leonardo da Vinci. A recent number of the *Deutsche medizinische Wochenschrift* contains the statement from a reliable source that the "academy" is composed of men without scientific standing, who, by bestowing such honors on prominent men, hope to gain prestige and capitalize their membership, by inducing obscure teachers to pay handsome sums for the bestowal of like favors. The publisher of the *Deutsche medizinische Wochenschrift* recalls in this connection that, several years ago, a similar swindle was perpetrated by a society in southern Italy, and that, at that time, several men were thus victimized. As the "Accademia" may decide to operate in America, this word of warning may not be superfluous.

### Personal

Professor Mangold, department head in the Physiologic Institute in Freiberg, has been called to Berlin as director of the Veterinary Physiologic Institute, to succeed the late Prof. N. Zuntz.

## Marriages

ROBERT BUSH MCGRAW, New York City, to Miss Catharine Ruth Ross of White Plains, January 2.

FRANK MULLEN CANNON, Arco, Idaho, to Miss Rose Leibbrand of Milton, Ore., Dec. 30, 1923.

RUTHERFORD B. HAYES, Guymon, Okla., to Miss Della Wilson of Liberal, Nov. 20, 1923.

DAVID T. PROCTOR, Nampa, Idaho, to Miss Benona Wallace Jones of Chicago, recently.

SAMUEL HANCOCK, West Frankfort, Ill., to Miss Flo Young of Mount Vernon, recently.

JOSEPH V. BURNS to Miss Anna McDyer, both of Coaldale, Pa., January 2.

## Deaths

**Henry Orlando Marcy** ✱ Boston; Medical School of Harvard University, Boston, 1864; died, January 1. Dr. Marcy was born in Otis, Mass., in 1837. Following graduation he became medical director on General Sherman's staff in the Carolina campaign. He was the first American pupil of Lister and introduced the Lister methods into the United States. He attended the Seventh International Medical Congress in London, England, 1881, and was president of the section on gynecology of the Ninth International Medical Congress at Washington, D. C., 1887. For many years, Dr. Marcy conducted The Cambridge Hospital for Women. He was instrumental in building the Harvard Bridge, the Charles River Basin, the Cambridge Esplanada Parkway and the Massachusetts Institute of Technology, of whose site he was chief owner. He served as Vice President of the American Medical Association, 1880, a member of the Section on Obstetrics, Gynecology and Abdominal Surgery, 1882, and a member of the Judicial Council, 1886-1889. He was elected President in 1891 and presided over the Detroit meeting in 1892. Dr. Marcy was a member of the American Academy of Medicine (president, 1884), the British Medical Association and corresponding member of the Bologna Medical Chirurgical Society. Among his publications were "The Perineum, Its Anatomy and Surgical Treatment"; "The Anatomy and Surgical Treatment of Hernia," and "Semi-Centennial of the Introduction of Antiseptic Surgery in America." He also published a translation of the works of Prof. G. B. Ercolani, Bologna, Italy, on "The Reproductive Processes."

**Alfred Peter Chronquest** ✱ New York; Tufts College Medical School, Boston, 1913; member of the Massachusetts Medical Society and the New England Society of Psychiatry; senior surgeon, U. S. Public Health Service, reserve; formerly on the staff of the Danvers (Mass.) State Hospital; served in the M. C., U. S. Army, during the World War; had been stationed at various U. S. Public Health Service hospitals throughout the country; aged 39; died, Dec. 31, 1923.

**Albert Francis Mattice** ✱ Seattle; Johns Hopkins University Medical Department, Baltimore, 1910; member of the American and the Puget Sound Academies of Ophthalmology and Oto-Laryngology; served in the M. C., U. S. Army, during the World War; aged 39; died, Nov. 30, 1923, of a self-inflicted bullet wound.

**Leo Heller Bernd** ✱ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1898; clinical professor of surgery at the Woman's Medical College of Pennsylvania for ten years; served in the M. C., U. S. Army, in France, during the World War; aged 48; died suddenly, January 2, of heart disease.

**Percy Whittington Saunders,** Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1902; formerly on the staff of the Toronto General Hospital; physician to the Royal Free Hospital and the National Epileptic Hospital, London, England; died in November, 1923, in London.

**Daniel Grant Sanor,** Columbus, Ohio; Baltimore (Md.) University School of Medicine, 1894; member of the Ohio State Medical Association, and the American Academy of Ophthalmology and Oto-Laryngology; aged 56; died in December, 1923, following a long illness.

**James Metheny Barr** ✱ Pittsburgh; University of Pittsburgh School of Medicine, 1908; member of the Medical Society of the State of Pennsylvania; examiner for the U. S. Veterans' Bureau; aged 40; died, Dec. 28, 1923, of tuberculosis.

**Donald Archibald McLennan,** Warmsprings, Mont.; McGill University Faculty of Medicine, Montreal, Que., 1897; assistant superintendent of the Montana State Hospital; aged 58; died suddenly, Dec. 27, 1923, of cerebral hemorrhage.

**James Almarin Quinn,** St. Paul; Medical Department of Columbia College, New York, 1880; at one time county coroner; on the staff of the Northern Pacific Hospital; aged 68; died, Dec. 26, 1923, following a long illness.

**William H. Budge,** Marshfield, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; formerly mayor of Marshfield, and for five years health officer; also a pharmacist; aged 82; died, Dec. 30, 1923, of senility.

**John Franklin Sanders** ✱ Blytheville, Ark.; Rush Medical College, Chicago, 1889; for ten years city health officer; on the staff of the Blytheville General Hospital; aged 60; died, Dec. 27, 1923, of cerebral hemorrhage.

**Frank W. McLaughlin** ✱ Alton, N. H.; Baltimore (Md.) University School of Medicine, 1894; aged 53; died, Dec. 17, 1923, at the Peter Bent Brigham Hospital, Boston, of duodenal ulcer and bronchopneumonia.

**Levi Marquis Asbury,** Lexington, Mo.; Keokuk (Iowa) Medical College, 1894; served in the M. C., U. S. Army, during the World War; aged 58; died in December, 1923, in a hospital at Kansas City.

**James Calvan Corsant,** Cedar Falls, Iowa; State University of Iowa College of Medicine, Iowa City, 1900; aged 49; died, Dec. 31, 1923, at the State Hospital, Independence, of cerebral hemorrhage.

**Albert Abrams,** San Francisco; University of Heidelberg, Germany, 1882; known for his sponsorship of spondylotherapy and electronic school of medicine; aged 60; died, January 13, of pneumonia.

**John Calhoun Balthrop,** Newbern, Tenn.; University of Tennessee College of Medicine, Memphis, 1890; member of the Tennessee State Medical Association; aged 65; died recently.

**Frank W. Henington,** Terry, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1889; aged 58; was found dead in bed, Dec. 22, 1923, of heart disease.

**Fred Arlington Metts** ✱ Bluffton, Ind.; Fort Wayne College of Medicine, 1898; Spanish-American and World War veteran; aged 45; died, Dec. 31, 1923, following a long illness.

**Richard Frederick Burke,** New York; Medical Department of Columbia College, New York, 1887; aged 63; died, Nov. 28, 1923, of chronic nephritis, at Valley Stream, L. I.

**Perry M. Baker,** Artesia, N. M.; Louisville (Ky.) Medical College, 1904; aged 45; died, Dec. 23, 1923, while en route to Kansas City, Mo., of an overdose of narcotics.

**Paschal E. Bryant,** London, Ky.; University of Louisville (Ky.) Medical Department, 1894; aged 53; died, Dec. 25, 1923, of injuries received in a runaway accident.

**Robert E. Donnell** ✱ De Soto, Mo.; Beaumont Hospital Medical College, St. Louis, 1900; aged 46; died, Oct. 15, 1923, at St. Luke's Hospital, St. Louis, of appendicitis.

**Clark D. Sackett,** Ashland, Ohio; Western Reserve University School of Medicine, Cleveland, 1869; aged 78; died, Dec. 24, 1923, at El Paso, Texas, of senility.

**Zachariah Hickman,** Benton, Ill.; University of Nashville (Tenn.) Medical Department, 1861; Civil War veteran; aged 77; died, Dec. 30, 1923, of senility.

**Lemuel Sledge Allen** ✱ Indianola, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; aged 46; died, Dec. 28, 1923.

**Alexander Blair Stoops,** Mount Sterling, Ky.; University of Pennsylvania School of Medicine, Philadelphia, 1869; aged 81; died, Dec. 4, 1923, of senility.

**Edward Allison Butler,** San Diego, Calif.; Boston (Mass.) University School of Medicine, 1879; aged 68; died, Dec. 31, 1923, following a long illness.

**Charles F. Blank,** St. Louis; St. Louis Medical College, 1887; also a pharmacist; aged 58; died, Dec. 26, 1923, of diabetes mellitus.

**Charles Worth Talbott** ✱ Lake Villa, Ill.; Rush Medical College, Chicago, 1883; aged 72; died, Dec. 26, 1923, of chronic nephritis.

**Harold Albert Meeks** ✱ Meriden, Conn.; Bellevue Hospital Medical College, New York, 1890; aged 55; died in December, 1923.

**Joseph Erastus Brown,** McConnelsville, Ohio; Miami Medical College, Cincinnati, 1871; aged 76; died, Oct. 31, 1923, of senility.

**Joseph E. Lee,** Thomasville, Ga.; Atlanta Medical College, 1895; aged 55; died suddenly, Dec. 13, 1923, of heart disease.

**James Wilson Acker,** Montevallo, Ala. (licensed, Alabama, 1878); Confederate veteran; aged 86; died recently, of senility.

**Adam Ewing Miller,** Jerseyville, Ill.; Rush Medical College, Chicago, 1869; aged 85; died, Dec. 22, 1923, of heart disease.

**John A. Postlewait** ✱ Tarkio, Mo.; Jefferson Medical College of Philadelphia, 1878; aged 73; died, Dec. 3, 1923.

---

**Correction.**—It was reported that Dr. Whiting S. Worden, U. S. health officer at Yokohama, Japan, had perished in the earthquake in September (THE JOURNAL, Nov. 3, 1923, p. 1540). This was not true. Mrs. Worden died; Dr. Worden arrived at San Francisco, Dec. 13, 1923.

## Correspondence

### CARBON MONOXID ASPHYXIATION FROM MOTOR EXHAUST

*To the Editor:*—I wish to report three cases of poisoning by motor gas because, while the newspapers are reporting deaths from this cause all the time, few people realize how insidious this poison is or that children may succumb in a few minutes to an amount that may be unnoticed by adults.

Dr. H., preparatory to setting out for his office on the morning of Nov. 13, 1923, opened the door of his garage, which is in the basement of his residence, and started the engine, when a neighbor came into the yard. The doctor left his engine running idle and went out. While he was talking, his two children and a neighbor's child were playing about. Their ages varied from 4 to 5½ years. In certainly less than ten minutes he returned to the garage, the doors of which were now closed, and on looking through the door window he saw his little girl lying on the floor, her face covered with vomitus. As he entered the garage he did not think of gas poisoning and felt no dizziness, faintness or nausea and noted no odor. Picking up his daughter, he carried her to another room in the basement, laid her on a table and felt of her head for bumps, thinking she had fallen from the car and hurt herself. Then, with no definite reason, he went back and looked through the window of his car and saw his son and his son's playmate lying on the floor unconscious. For the first time he realized what the trouble was, and got the three children out into the fresh air. The boys were breathing slowly with their heads thrown back, their faces waxy white and their pupils widely dilated. In about twenty minutes they began to breathe faster, and regained consciousness. One boy vomited several times, but recovered so rapidly that in the afternoon he was turning somersaults on the bed; the other boy was up and walking in half an hour. For three days the girl had hyperpnea, recurrent attacks of vomiting, and acetone and diacetic acid in the urine. With sips of water by mouth and rectal injections of sugar solution, she made a good recovery.

PAUL W. EMERSON, M.D., Boston.

### "STUDIES ON ISO-AGGLUTININS IN THE BLOOD OF THE NEW-BORN"

*To the Editor:*—In an article under this title in THE JOURNAL, Nov. 24, 1923, Dr. de Biasi made several statements regarding the use of mother's blood in the transfusion of new-born infants, which, we feel, require corroboration. He says:

"Mothers may act as donors for their new-born infants without compatibility tests for agglutination and hemolysis."

If this is true, either the infant is a universal recipient and can be transfused without preliminary tests not only from his mother but from any individual, or the iso-agglutinins and the isohemolysins in the infant's serum are absent or not fully established. Other observers have noted cross agglutination of mother's and infant's blood.

Untoward results may occur when the blood of a mother is transfused into the infant if the two individuals are of incompatible groups, when, first, the agglutinins in the serum of the mother be unusually strong in titer, which is rare, or, second, when the infant's serum agglutinates the corpuscles of the injected mother's blood. The latter fails to occur at times for the reason that the agglutinins in the infant's serum are either not present at birth or are so weak that the foregoing reaction will not take place, which fact probably accounts for the absence of reaction in Dr. de Biasi's transfusions with incompatible bloods. However, as we have found that frequently the agglutinins in the infant's serum are present in sufficient strength to be demonstrated by the usual methods, we feel that the promiscuous use of mothers or of other adults as donors for new-born infants should be cautioned against, and that blood from an individual of the same or compatible group be used.

W. M. HAPP, M.D.,
A. H. ZEILER, M.D., Los Angeles.

### GLYCERIN PLATE FOR DETECTING NON-POLLEN TYPE OF ASTHMA

*To the Editor:*—The value of the glycerin microscopic slide for the trapping and identification of air-borne pollen has long been known. I have also found this device of value in the handling of difficult chronic, nonpollen types of hay-fever and asthma, especially those sensitive to animal hairs. The glycerin traps not only pollen and inorganic dusts, but also hair, fine feather particles, and fibers of wool, silk, cotton and linen, all of which can be easily identified microscopically with a little practice. They will be found unexpectedly at times in excessive quantity under conditions in which their absence seems so certain as to make them an inconsequential factor. If the slides are stained with compound solution of iodin, unsuspected pollen granules also will be found, if present. If the slides are set out in a patient's room or on the window sill for twenty-four hours, the comparative presence or absence of these influences can be easily determined, and will frequently explain the failure of patients with asthma of this type to improve, and also why such patients are clear of attacks in one room or on one side of a hospital, and suffer attacks in another room in the same house or on another side of the same institution.

I. S. KAHN, M.D., San Antonio, Texas.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### *P*H—THE SØRENSEN UNIT FOR HYDROGEN ION CONCENTRATION

*To the Editor:*—Please tell me the meaning and explanation of *p*H?

JOSEPH HALTON, M.D., Sarasota, Fla.

ANSWER.—*p*H is a symbol used when denoting in quantitative terms the *actual* acidity of a solution. It may be explained as follows:

An acid is any substance which dissociates to give hydrogen ions, $H^+$; a base dissociates to give hydroxyl ions, $OH^-$. For example, a solution of hydrochloric acid dissociates as follows:

$$HCl \rightleftarrows H^+ + Cl^-$$

(because the amount of dissociation is large it is called a strong acid). Sodium hydroxid dissociates in aqueous solution:

$$NaOH \rightleftarrows Na^+ + \overline{OH}$$

Water itself is dissociated slightly (to the extent of one molecule in 500,000,000). But, slight as this dissociation is, it gives to water the properties of both an acid and a base

$$H_2O \rightleftarrows H^+ + \overline{OH}$$

Water is neutral, however, because the amount of hydrogen ions and the hydroxyl ions are equal. If anything is added to water which increases the concentration of hydrogen ions, then the solution is acid; and if the hydroxyl ions are increased the solution becomes alkaline. However, acidity and alkalinity can be measured in terms of *hydrogen* ion concentration alone, without resorting to hydroxyl concentration.

Like all elementary chemical reactions, water obeys the Law of Mass action when dissociating:

$$[H_2O] = [H^+] \times [\overline{OH}]$$

Suppose elementary figures are employed in this equation for ease of vizualization, 16 being a *constant* value:

$$16 = 4 \times 4$$

This might be presumed to represent an equation of neutrality because the $H^+$ value of 4 is the same as the $OH^-$ value. If the hydroxyl was increased, the hydrogen ion would automatically have to decrease to keep the value 16; so in case the hydroxyl value was increased to say 8, the hydrogen ion concentration would be 2; i. e. $16 = 2 \times 8$. In reality, however, the actual figures for water are much smaller, the concentration of the hydrogen ions being 0.000 0001 or $10^{-7}$ as more commonly expressed (which means that the acidity of water is roughly one ten-millionth as great as that of a normal solution of hydrochloric acid). And, of course, when the solution is made alkaline, the concentration of the hydrogen ions must necessarily decrease below this already small amount. On this basis neutral, acid and alkaline solution may be considered in more definite terms:

Neutral solution: $[H^+]^* = 10^{-7}$ Normal (as in water)
Acid solution: $[H^+]$ is greater than $10^{-7}$ Normal
Alkaline solution: $[H^+]$ is less than $10^{-7}$ Normal

* Brackets denote concentration.

However, such figures are quite cumbersome, so Sørensen proposed that in their place whole numbers might be used by utilizing reciprocal logarithmic values; when Sørensen values are expressed, the term used is $p_H$. Thus, the hydrogen ion concentration of water, $0.10^{-7}$ becomes $p_H = 7$, and $p_H = 7$ is the neutral point in the scale. Any value below $p_H = 7$ means that the solution is acid; above 7 means that the solution has less concentration of hydrogen ions than water and therefore the solution is alkaline. For instance, the slight alkalinity of the blood is $p_H = 7.4$. In case of a tenth normal solution of an acid, the hydrogen ion concentration is $10^{-1}$, and $p_H = 1$; in a tenth normal solution of an alkali, the hydrogen ion concentration is $10^{-13}$ and $p_H = 13$. The actual definition is:

$$p_H = \log \frac{1}{[H^+]}$$

More detailed discussions may be found in:

Clark, W. M.: Determination of Hydrogen Ions, Baltimore, Williams and Wilkins, 1923.
Folin, Otto: Laboratory Manual of Physiological Chemistry, New York, D. Appleton & Co., 1922.
Wendt, G. L.: Electrometric Titrations, Bull. 86, Central Scientific Company, Chicago.

## SCHIFF'S REAGENT—FUCHSIN-SULPHUROUS ACID

*To the Editor:*—What is Schiff's reagent? What is its use? Is it reliable as a test for methyl alcohol in ethyl alcohol?

J. S., Tampa, Fla.

ANSWER.—Schiff's reagent for aldehyds was originally prepared by dissolving 0.25 gm. of fuchsin (rosanilin acetate or hydrochlorid) in 1,000 c.c. of water and decolorizing by passing in sulphur dioxid. In the presence of aldehyds, the blue-violet color is restored. The fuchsin-sulphurous acid test solution of the U. S. Pharmacopeia serves essentially the same purpose. It is prepared by dissolving 0.5 gm. of fuchsin and 9 gm. of sodium bisulphite in 500 c.c. of water and acidifying with 10 c.c. of hydrochloric acid. The solution should be preserved in bottles protected from the light.

The U. S. Pharmacopeia gives the following method for detecting methyl alcohol in ethyl alcohol: Dilute the alcohol with distilled water until it contains about 10 per cent. of alcohol. To 5 c.c. of the diluted solution add 2 c.c. of 3 per cent. potassium permanganate solution and 0.3 c.c. of sulphuric acid. Allow the mixture to stand five minutes. Add an aqueous solution of sulphurous acid (sulphur dioxid) drop by drop with agitation until the precipitated manganese dioxid is just dissolved. (An excess must be avoided.) Add 1 c.c. of sulphuric acid and 5 c.c. of fuchsin-sulphurous acid solution. If methyl alcohol was present originally, a violet color appears; otherwise the solution remains colorless. The test is reasonably accurate, but it requires skilful manipulation to secure reliable results. For accurate determinations it is first necessary to remove substances which might interfere. An excess of solid sodium carbonate or sodium hydroxid is added to the solution and the mixture distilled until about one fourth remains. The distillate is redistilled without the addition of alkali and the second distillate used.

A test for methyl alcohol in ethyl alcohol which is generally considered to be more reliable is the Denigé test as improved by Elvove and by Chapin. This was described in THE JOURNAL, Oct. 8, 1921, p. 1199, and Oct. 15, 1921, p. 1274. The subject is fully discussed and bibliography given.

## TREATMENT OF SEBACEOUS CYST

*To the Editor:*—Several months ago, I attempted to remove a large sebaceous cyst of the scalp of thirty years' growth. I was unable to enucleate the capsule, as it was so adherent to adjacent structures that it could not be separated without tearing. I therefore evacuated the contents, which were organized and of the consistency of liver. Although the overlying scalp has shrunk greatly, there is still a discharge of pus, which has kept up in spite of all treatment, such as packing with iodoform gauze and irrigations with mercuric chlorid solutions, etc. Could you suggest any other treatment, or will it continue to discharge as long as the capsule remains?

ANSWER.—A lesion with organized contents of the consistency of liver is not a cyst, although it may clinically resemble one. It is highly suspicious of a malignant growth and, whether malignant or not, should be treated by complete destruction, preferably by operative removal, the operation going completely outside the area of the lesion. Even with a sebaceous cyst of the scalp, which is a common lesion, destruction requires complete removal of the capsule.

## DIPHTHERIA ANTITOXIN FOR THE INFANT

*To the Editor:*—In the matter of using diphtheria antitoxin, I see no definite teaching as to the age it can be used, less than 1 year. Can it be used for infants a few days old? Would the use of 500 units or more to the mother have any influence with the child in preventing diphtheria? If it is used in an infant a few days old, what would be the required and safe dose?

G. C. KINGSBURY, M.D., Largo, Fla.

ANSWER.—In the presence of diphtheria, no age is a contra-indication to the administration of antitoxin. Park and Krumwiede (Handbook of Practical Treatment, Musser and Kelly **4**:60, 1917) give the dose of diphtheria antitoxin for infants of from 10 to 30 pounds (4.5 to 13.6 kg.) and under 2 years of age as from 2,000 to 10,000 units. Ker (Infectious Diseases, Ed. 2, 1920, p. 431) seldom gives infants more than 4,000 units. The immunity to diphtheria in young infants seems to depend on antitoxin which is received from the mother through the placental circulation. This immunity is possessed by more than 90 per cent. of children during the early weeks of life, but at the end of a year this has been lost by about half of them. It is not likely that any considerable amount of antitoxin is received by the nursing infant through the mother's milk; even if some antitoxin is in the milk, it is mostly destroyed in the stomach. Serums are well borne by young children, as they have little sensitiveness to foreign proteins. A suitable immunizing dose of diphtheria antitoxin for an infant would be from 200 to 500 units, and the therapeutic dose from 2,000 to 10,000 units.

## DIPHTHERIA TOXIN-ANTITOXIN—BARREL STAVE SPLINT TRANSPLANTATION OF ECTOPIC PREGNANCY

*To the Editor:*—1. Would you advise giving diphtheria toxin-antitoxin to a boy, aged 5 years, who six months ago received an immunizing dose of antitetanic serum; and a girl, aged 3½, who one year ago received 5,000 units of diphtheria (antidiphtheric) serum unnecessarily? There is no diphtheria in this locality at this time. The children are my own. 2. Please tell me in which issue of THE JOURNAL the "barrel stave" splint for fracture of the clavicle is described? Are these splints for sale by any commercial house? 3. Can you tell me in which issue a small article appeared describing the successful transplantation of an extra-uterine pregnancy into the uterus? It appeared as a small copied article or abstract, as I recollect.

W. S. H., Jr., Jackson, Miss.

ANSWER.—1. The children should first be given Schick tests. If these give negative results, no immunization would be indicated. If the tests give positive reactions, the toxin-antitoxin may be given as in other children. No danger need be feared from the small amount of serum in the mixture, especially as it is injected subcutaneously.

2. The article, "Barrel Stave Splint in Fracture of Clavicle," by H. A. Royster, appeared in the *Annals of Surgery*, October, 1919, and was abstracted in THE JOURNAL, Nov. 8, 1919, p. 1469.

3. The article, "Transplantation of Ectopic Pregnancy from Fallopian Tube to Cavity of Uterus," by C. J. Wallace, appeared in *Surgery, Gynecology and Obstetrics*, May, 1917. This was abstracted in THE JOURNAL, May 19, 1917, p. 1509.

# Medical Education, Registration and Hospital Service

## COMING EXAMINATIONS

CALIFORNIA: Los Angeles, February 18-20. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written Examinations in Class A Medical Schools. Part I, February 13-15, 1924. Secretary, J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEW YORK: Albany, Buffalo, New York and Syracuse, January 28-31. Ass't, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

PENNSYLVANIA: Philadelphia, January 29-February 2. Prelim. Exam., Mr. C. D. Koch, 422 Perry Bldg., Philadelphia.

VERMONT: Burlington, February 12. Sec., Dr. W. Scott Nay, Underhill.

## MEDICAL FELLOWS OF THE NATIONAL RESEARCH COUNCIL

The following is a list of all Fellows in medical subjects, who have been appointed by the National Research Council from June, 1922, to Dec. 10, 1923. As noted, the list gives the full names, the universities and the teachers to whom which eleven are in physiology; seven in surgery; six in biochemistry; five in medicine; four each in bacteriology and pathology; three in anatomy; two in pharmacology, and one each in chemistry, laryngology, neuropathology, neurosurgery, pediatrics and syphilis.

### Pennsylvania July Examination

Mr. C. D. Koch, preliminary examiner, Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia and Pittsburgh, July 10-14, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 193 candidates examined, 175 passed and 17 failed. Seventeen candidates were licensed by reciprocity. Eight candidates were licensed by endorsement of credentials. Eleven candidates were licensed as drugless healers and one failed. The following colleges were represented:

| College | PASSED Year Grad. | Number Licensed |
|---|---|---|
| Yale University School of Medicine | (1905) | 1 |
| Columbian University | (1893) | 1 |
| Georgetown University School of Medicine | (1908) | 1 |
| Howard University | (1922) | 1 |
| University of Maryland | (1922) | 2 |

*Fellows in Medicine of the National Research Council Appointed to Date*

| Name | Place of Work | With Whom | Field of Medicine | Expiration of Appointment | Stipend |
|---|---|---|---|---|---|
| Albritton, Errett C. | Ohio State University | Hoskins | Physiology | Nov. 4, 1924 | $2,300 |
| Andrus, Edwin Cowles | London University | Dale | Physiology | Aug. 28, 1924 | 2,200 |
| Andrus, Wm. D. | Cincinnati University | Heuer | Surgery | Sept. 22, 1924 | 1,800 |
| Anson, Barry J. | Harvard | Lewis | Anatomy | Sept. 24, 1924 | 2,300 |
| Barker, Howard B. | University of Michigan | Huber | Anatomy | July 1, 1924 | 1,800 |
| Bent, Michael J. | Columbia | Zinsser, Gay | Bacteriology | Sept. 27, 1924 | 2,000-2,300 |
| Bolt, Wm.[3] | Johns Hopkins | MacCallum | Pathology | Dec. 31, 1924 | 2,300 |
| Cone, Wm. V. | Iowa State | Orton | Neuropathology | Sept. 30, 1924 | 2,300 |
| Connor, Chas. L. | Harvard | Wolbach | Pathology | Jan. 31, 1925 | 2,300-2,500 |
| Curtis, George M. | Rush | Lewis | Surgery | Oct. 31, 1924 | 2,000 |
| Davis, Loval E. | Northwestern | Kannavel | Surgery | June 30, 1924 | 2,300 |
| | Harvard | Cushing | | | |
| Derick, Clifford L.[2] | Harvard | Christian | Medicine | Sept. 24, 1923 | 1,800 |
| Douglas, Beverly | Cincinnati | Heuer | Surgery | Jan. 22, 1925 | 2,000-2,300 |
| Ferry, Ronald M. | Harvard | Henderson | Biochemistry | Sept. 22, 1924 | 2,500 |
| Hamilton, G. W.[1] | University of Chicago | Carlson | Physiology | Dec. 31, 1924 | 2,300 |
| Holman, Emile Frederic[1] | Harvard | Cushing | Neurosurgery | April, 1925 | 2,300 |
| Joseph, Hugh W.[2] | University of Chicago | Stieglitz | Phys. Chemistry | Oct. 1, 1923 | 1,800 |
| Kleitman, Nathaniel | Utrecht, Holland | Magnus | Physiology | Sept. 9, 1924 | 2,300 |
| Kunde, Margarete H. M. | University of Chicago | Carlson | Physiology | Jan. 31, 1924 | 2,000 |
| Leiter, Louis[2] | University of Chicago | Wells | Pathology | Dec. 31, 1923 | 1,800 |
| Lennox, Wm. G. | Harvard | Edsall | Medicine | Aug. 31, 1924 | 2,500 |
| Leonard, C. S.[1] | Yale University | Underhill | Pharmacology | Oct. 16, 1924 | 1,800 |
| Locke, Chas. Edward[2] | University of California | Naffziger | Surgery | Nov. 2, 1923 | 2,300 |
| MacCready, Paul B. | Johns Hopkins | Crowe | Laryngology | Sept. 30, 1924 | 2,600 |
| McCordock, Howard A.[1] | University of Buffalo | Roman-Williams | Pathology | Sept. 30, 1924 | 2,300 |
| McIver, Monroe A.[2] | Harvard | Cannon | Physiology | Sept. 14, 1923 | 1,800 |
| McLean, Jay | Leipzig | Payr | Surgery | Sept. 22, 1924 | 1,800-2,300 |
| | Paris | Delbet | | | |
| Mills, Clarence A.[2] | Cincinnati | Blackfan | Pediatries | June 25, 1923 | 2,500 |
| Morgan, David P. | Harvard | Zinsser | Bacteriology | July 1, 1924 | 2,500 |
| Neivert, Harry[1] | Jefferson | Schaeffer | Anatomy | Oct. 14, 1924 | 2,700 |
| Newman, L. H.[1] | Harvard | Folin | Biochemistry | Oct. 14, 1924 | 2,300 |
| Orr, Harold[2] | London Hospital | Sequeira | Syphilis | Dec. 31, 1923 | 2,500 |
| Rapport, David[2] | Cornell Med. | Lusk | Physiology | Sept. 18, 1923 | 2,500 |
| Reznikoff, Paul[2] | Harvard | Aub-Drinker | Physiology | Aug. 14, 1924 | 1,800 |
| Robinson, Elliott S.[2] | Yale | Winternitz | Bacteriology | Aug. 31, 1923 | 2,300 |
| Rosenthal, Sanford M. | Johns Hopkins | Abel | Pharmacology | Oct. 2, 1924 | 1,800 |
| | Paris | Widal | | | |
| Schmitz, Herbert W.[2] | N. Y. Post-Grad. Hospital | Meyers | Biochemistry | June 30, 1923 | 2,300 |
| Sands, M. J.[1] | Royal Infirmary, Edinburgh | Meakins | Physiology | Sept. 30, 1924 | 1,800 |
| Schwartze, Erich W. | University of London | Bayliss | Physiology | Oct. 14, 1924 | 2,700 |
| Scott, Jos. M. | Johns Hopkins School Hyg. and Public Health | Simon | Bacteriology | Aug. 31, 1924 | 2,300 |
| Shibley, Gerald S. | Columbia | Palmer | Medicine | Sept. 22, 1924 | 2,000-3,000 |
| Smith, Beverly C.[2] | Columbia | Whipple | Surgery | June 12, 1923 | 1,800 |
| Smith, Francis M. | Johns Hopkins | McCollum | Biochemistry | Jan. 31, 1924 | 2,300 |
| Smith, Harry P. | Columbia | Sherman | Chemistry | Aug. 30, 1924 | 1,800 |
| Smith, H. W.[1] | Harvard | Cannon | Physiology | Oct. 9, 1924 | 2,300 |
| Stieglitz Edw. J.[2] | Johns Hopkins | Longcope | Medicine | Oct. 3, 1923 | 2,300 |
| Strong, George F.[3] | Harvard | Christian | Medicine | Mar. 31, 1923 | 2,500 |
| Trimble, Harold Guyon[1] | Harvard | Folin | Biochemistry | Sept. 30, 1924 | 2,300 |

1. Fellows appointed at the Sept. 29, 1923, meeting. 2. Fellowships vacated at the expiration of term 3. Fellowships terminated at end of three months.

they are assigned, the subjects given, the dates when their appointments expire and the stipends provided. It will be recalled, that in order to relieve the increasing shortage of laboratory teachers in medicine, in June, 1922, the General Education Board and the Rockefeller Foundation each gave $50,000 a year for a five year period to the National Research Council of Washington, D. C., to establish fellowships by which students desiring to enter the profession of medical teaching might secure the essential preparation in any high grade university of his choice. As shown in the list, forty-eight students have taken advantage of this opportunity of

| | | |
|---|---|---|
| Boston University School of Medicine | (1921), (1922) | 2 |
| Johns Hopkins University | (1922) | 1 |
| Tufts College Medical School | (1922) | 1 |
| Univ. of Michigan Med. School | (1903), (1920), (1921, 2) | 4 |
| St. Louis University School of Medicine | (1922) | 1 |
| University and Bellevue Hospital Medical College | (1922) | 1 |
| Long Island College Hospital | (1920), (1921) | 2 |
| Eclectic Medical College, Cincinnati | (1922) | 1 |
| University of Cincinnati | (1922) | 1 |
| Hahnemann Medical Coll. and Hosp. of Philadelphia | (1922) | 9 |
| Medico-Chirurgical College of Philadelphia | (1902) | 1 |
| Jefferson Med. Coll. | (1917), (1920, 3), (1921, 7), (1922, 32) | 43 |
| Temple University Department of Med. | (1921), (1922, 10) | 11 |
| Univ. of Penn. | (1918), (1920, 3), (1921, 13), (1922, 38) | 55 |
| University of Pittsburgh | (1922) | 23 |
| Woman's Medical College of Pennsylvania | (1922) | 4 |

| | | |
|---|---|---|
| Marquette University School of Medicine | (1922) | 1 |
| McGill University Faculty of Medicine | (1901), (1922) | 2 |
| University of Toronto Fac. of Med. | (1912), (1921, 3), (1922) | 5 |
| University of Vienna, Austria | (1915)* | 1 |

| College | FAILED | Year Grad. | Number Failed |
|---|---|---|---|
| Pacific Medical College | | (1913) | 1 |
| Howard University | | (1920), (1922, 2) | 3 |
| Hering Medical College | | (1913) | 1 |
| Physio-Medical College of Indiana | | (1903) | 1 |
| Barnes Medical College | | (1906) | 1 |
| Ohio State University College of Homeopathic Med. | | (1922) | 1 |
| Hahnemann Med. College and Hospital, Philadelphia | | (1922) | 2 |
| Temple University Department of Med. | | (1920), (1922, 3) | 4 |
| University of Toronto, Ontario | | (1922) | 1 |
| National University of Athens, Greece | | (1905) | 1 |
| University of Naples, Italy | | (1917) | 1 |

| College | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|---|---|---|
| Rush Medical College | | (1911) | Illinois |
| University of Illinois | | (1913) | Illinois |
| Baltimore Medical College | | (1902) | Maryland |
| University of Maryland | | (1908) | Maryland |
| Harvard University | | (1890) | Washington |
| University of Michigan | | (1911) | Michigan |
| Bellevue Hospital Medical College | | (1898) | Maryland |
| Columbia University | | (1915) | New York |
| University and Bellevue Hospital Medical College | | (1917) | New York |
| Hahnemann Medical Coll. and Hosp., Philadelphia | | (1896) | New York |
| Jefferson Medical College | | (1917) West Virginia, (1920) | Missouri |
| Univ. of Pennsyl. | | (1909) Virginia, (1913) Texas, (1920) | Missouri |
| University of Virginia | | (1904) | Virginia |
| University of Texas Department of Medicine | | (1914) | Texas |

| College | LICENSED BY CREDENTIALS | Year Grad. | Endorsement of Credentials |
|---|---|---|---|
| Medico-Chirurgical Coll. of Philadelphia | | (1899), (1902) | U. S. Army |
| Jefferson Medical College | | (1921) | N. B. M. Ex. |
| University of Pennsylvania | | (1917), (1920, 3) | N. B. M. Ex. |
| Woman's Medical College of Pennsylvania | | (1920) | N. B. M. Ex. |

* Graduation not verified.

# Social Medicine and Medical Economics

## THE PHYSICIAN'S INCOME TAX

The income tax law has not been changed during the past year in any way of immediate interest to the medical profession. Efforts to procure a reversal of the ruling of the Commissioner of Internal Revenue denying the deductibility of traveling expenses incident to attending meetings of medical societies have thus far proved unavailing; so also have efforts to procure a reversal of his ruling denying the deductibility of expenses incident to postgraduate study. The proposed revision of the federal revenue laws, now under consideration by Congress, will in no way affect the returns that must be made for the calendar year 1923. Such returns must be filed on or before March 15, 1924.

### I. WHO MUST MAKE RETURNS

Returns must be filed by the following persons: (1) every person, whether married or single, whose gross income during the year was $5,000 or more; (2) every married couple, living together, whose gross income was $5,000 or more; (3) every married couple, living together, whose net income was $2,000 or more, no matter what their gross income was; and (4) every unmarried person whose net income was $1,000 or more, no matter what his gross income was.

Blanks for making returns are sent to taxpayers by collectors of internal revenue, without request, merely as a matter of courtesy. The fact that such a blank has not been received does not excuse any one from making a return. If a taxpayer has not received a blank, he should apply for one to the collector of internal revenue in the district in which the taxpayer resides. All persons deriving any part of their incomes from businesses or professions, as distinguished from salaries and wages, and all persons whose net incomes, no matter from what source derived, were in excess of $5,000, must make returns on Form 1040. Full instructions as to what constitutes gross income and what net income and as to exemptions and allowable deductions, applicable to taxpayers generally, accompany the blank forms supplied by the collector. Physicians should refer to such forms with respect to matters of general interest. It is undertaken here to supply only such information as is of special interest to the medical profession.

### II. GROSS INCOME: WHAT IS IT?

A physician's gross income is the total amount of money received by him during the year from professional work, regardless of when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation, and as profits from other sources.

### III. DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct, in computing his income tax, all current expenses necessary in carrying on his practice. The following statement shows what are regarded by the Commissioner of Internal Revenue as necessary expenses and how such expenses are to be computed in determining the amount to be deducted:

*Office Rent.*—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent as professional expense; in order to make such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

*Office Maintenance.*—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

*Supplies.*—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment "the useful life of which is short" may be deducted, but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

*Equipment.*—Equipment comprises property of more or less permanent value. It may ultimately be used up, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using"; rather, it wears out. Payments for nonexpendable property or equipment for professional use cannot be deducted. As property of this class may be named automobiles, office furniture, medical, surgical and laboratory equipment of permanent value, and instruments and appliances constituting a part of the physician's professional outfit and to be used over a considerable period of time. Books of more or less permanent value are regarded as equipment, and the purchase price is therefore not deductible.

Although payments for nonexpendable articles or equipment cannot be deducted, yet from year to year there may be charged off reasonable amounts as depreciation, sufficient to cover the lessened value of such property through obsolescence, ordinary wear and tear, or accidental injury. If, however, improvement to offset obsolescence and wear and tear or injury has been made, and deduction for the cost claimed elsewhere in the return, no claim should be made for depreciation. No hard and fast rule can be laid down as to the amount to be deducted each year. Everything depends on the nature and extent of the property and on the use to which it is put. Five per cent. per annum has been suggested as a fair figure for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. The physician must in good faith use his best judgment and make such allowance for depreciation as the facts justify. Depreciation should be computed on the basis of the amount paid for the article or, if purchased before March, 1913, when the first income tax law went into effect, on the basis of its estimated value at that time. Physicians who from year to year claim deductions for depreciation on nonexpendable property will do well to make annual inventories as of January 1 each year.

*Medical Dues.*—Dues paid to societies of a strictly professional nature are a legitimate professional expense and may be deducted. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

*Postgraduate Study.*—The Commissioner of Internal Revenue holds that the expense of postgraduate study is a personal expense, and therefore not deductible. Efforts are being made to procure a reversal of this ruling.

*Traveling Expenses.*—Traveling expenses necessary for professional visits to patients are deductible. The Commissioner of Internal Revenue, however, still holds that traveling expenses incident to attendance at meetings of medical societies are merely personal expenses and therefore not deductible. The Association is endeavoring to procure a reversal of this ruling, and, in connection with the pending revision of the federal income tax law, is trying to procure legislation that will render such a ruling impossible under it. Physicians who have expended money for traveling expenses to attend meetings of medical societies are advised to make no deduction for the amount so expended, in computing their income taxes under current schedules. They are, however, advised either to make a memorandum on their income tax returns, or to file memorandum therewith, showing in detail the amount so expended. Such memorandum should show that payment of the tax on that amount has been demanded by the Commissioner of Internal Revenue and is made solely by reason of that demand, under protest and under duress, and that the taxpayer requests the immediate return of the amount so collected. The physician filing such a memorandum should retain a copy of it. In event of any reversal of the Commissioner's ruling, physicians who have made such records can more easily substantiate their claims for repayment, or any such physician, if he so desires, can better enter suit to recover the amount paid, in order to test the commissioner's ruling.

IV. AUTOMOBILES, ETC.

Money paid for an automobile is a payment on account of permanent equipment, and is not deductible. The expense of maintaining an automobile and loss through depreciation are deductible. The cost of maintenance includes money spent for gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician) chauffeurs' wages, etc. Deductible loss through depreciation is the actual diminution in value resulting from obsolescence and use, and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer. If the automobile is used for professional and also for personal purposes—as when used by the physician for recreation, or used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood. What has been said with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

V. MISCELLANEOUS

*Laboratory Expenses.*—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

*Losses by Fire, Etc.*—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced, but only to the extent that such loss or damage has not been made good by repair and the cost claimed as a deduction.

*Insurance Premiums.*—Premiums paid for insurance against strictly professional losses are deductible. This includes insurance against damages for alleged malpractice and for injuries by a physician's automobile while in use for strictly professional purposes, and against loss from theft of professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

*Sale of Spectacles, Etc.*—Oculists who furnish spectacles, etc., for patients may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

## RESULTS OF TONSILLECTOMY IN ACUTE RHEUMATISM IN CHILDREN

G. H. Hunt (*Guy's Hosp. Rep.* **73**:383 [Oct.] 1923) has attempted to follow up as many patients as possible to see how far operation influenced the liability to relapse. Letters were sent to about 250 patients asking for information as to the frequency and nature of recurrences. In some of these the tonsils have been enucleated; in others no operation had been done. Of these 250 cases investigated, 144 have been retained as supplying reliable data. Enucleation of the tonsils was done in sixty-six, and in thirty-five recurrences occurred. No operation was done in seventy-eight, and recurrences occurred in thirty-three. Ninety-six patients were admitted to hospital for a first attack of acute rheumatism; recurrences occurred in thirty-eight. The tonsils were enucleated in fifty of these patients, and recurrences occurred in twenty-three; no operation was done in forty-six, and recurrences occurred in fifteen. Forty-eight patients were admitted to hospital for a second or later attack; recurrences occurred in thirty. The tonsils were enucleated in sixteen, and recurrences occurred in twelve; no operation was done in thirty-two, and recurrences occurred in eighteen.

It is clear from these figures that recurrence is more likely to occur after a second than after a first attack. In both groups, recurrence occurred more frequently in cases in which tonsillectomy had been done, but the difference in relation to the total number in each group does not justify a positive conclusion that operation increases the liability to recurrence; the most that can be said is that the figures are suggestive. In the total 144 patients, the heart was affected in seventy-four, and in these seventy-four, recurrences occurred in thirty-nine. In the remaining, seventy recurrences occurred in twenty-nine. The figures suggest that the presence of a heart lesion increases the liability to recurrence, but are not conclusive. It is evident, then, that enucleation of the tonsils is not a certain preventive of a recurrence of acute rheumatism; indeed, in this series, recurrences were more frequent in patients subjected to operation. It seems probable that, although the tonsils may be the primary focus of infection or portal of entry in the first attack, the infective agent may remain dormant in some other part of the body; the increased frequency of recurrence in patients with cardiac lesions suggests that the persisting focus of infection may sometimes be the heart itself.

As regards the advisability of tonsillectomy in rheumatic children, many considerations must influence the question. There may be local indications of tonsillar infection with enlargement of the neighboring lymphatic glands; in such cases operation is probably advisable in order to prevent further attacks of tonsillitis with consequent impairment of the child's general health, but the figures do not support the contention that operation in such cases diminishes the liability to rheumatic infection. It is perfectly clear that operation in rheumatic children whose tonsils and lymphatic glands appear healthy is quite unjustifiable; it is sometimes advised in such cases, and the practice cannot be too strongly condemned.

# Book Notices

ANNALS OF ROENTGENOLOGY. A Series of Monographic Atlases. Edited by James T. Case, M.D. Volume three. Digestive Disturbances in Infants and Children Roentgenologically Considered, by Charles Gilmore Kerley, M.D., Consulting Physician to the Babies' Hospital, New York, and Leon Theodore LeWald, M.D., Professor of Roentgenology, New York University, with a Note on the Surgery of Infants, by William A. Downes, M.D., Clinical Professor of Surgery, Columbia University. Cloth. Price, $12. Pp. 81, with 166 illustrations. New York: Paul B. Hoeber, 1923.

This book consists of a brief descriptive text, well illustrated, followed by a series of fifty-four additional illustrations. The text begins with a chapter on technic and points of especial value in the roentgen-ray examination of the digestive tract in children. Short notes and illustrations of esophageal atresia, stenosis and cardiospasm complete the second chapter. Following this, two chapters take up conditions of the stomach and intestinal tract. Pyloric spasm and stenosis are clearly illustrated. A chapter headed "Influence of Posture on Digestion" proves to be a consideration of the gas bubble in the stomach and its location on change of position in an infant. One is impressed with the need of a more complete series of roentgen-ray observations of the digestive tract of infants and children based on a consideration of age, habitus and posture. Chapters on hernia of the diaphragm, tuberculous peritonitis, transposition of the viscera, abdominal tumors and foreign bodies complete the text. The French and Spanish translations make the book cumbersome, and seem out of place in an American edition. While adverse comment has been made, this book is to be commended, as it is the first of its kind and concerns a most interesting and important advance in the study of gastrointestinal conditions in infants and children.

CHIRURGIE DES VOIES BILIAIRES. Par Henri Hartmann, Professeur de clinique chirurgicale. Avec la collaboration de Boppe, Hautefort, Petit-Dutaillis, Renaud, Ulhrich et Virenque. Paper. Price, 30 francs, net. Pp. 356, with 89 illustrations. Paris: Masson et Cie, 1923.

This work is devoted for the most part to the study, from the anatomic, pathologic, clinical and surgical points of view, of the inflammatory conditions involving the gallbladder and their sequelae. The anatomic work is based on a large number of necropsies of the variations in size, shape, position and blood supply of the gallbladder, with especial reference to the surgical possibilities. The portion of the work dealing with the pathologic conditions involving the biliary bladder is by far the outstanding feature of the book. Here the questions of the manner of origin of gallstones and the pathogenesis of the various types of cholecystitis are critically reviewed from both the clinical and the experimental point of view; there are excellent illustrations of the various types of cholecystitis. The chapters on the symptomatology, diagnosis and surgical treatment of bile tract disease contain many case records and are well done, not only as regards the more usual inflammatory affections but also with respect to a few of the rarer conditions, such as the idiopathic cyst of the common duct. There are in the book many morbidity, mortality and postoperative statistics deserving of careful study. The bibliographies are extensive and contain most of the important American, English and German references—quite an improvement over the usually somewhat chauvinistic French bibliography. One cannot help feeling that, in spite of the general excellence of the book, more consideration might have been shown the neoplastic diseases of the gallbladder.

A MANUAL OF THE PRACTICE OF MEDICINE. Prepared Especially for Students. By A. A. Stevens, A.M., M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Eleventh edition. Cloth. Price, $3.50 net. Pp. 645, with 16 illustrations. Philadelphia: W. B. Saunders Company, 1923.

This book was first published in 1892, and has passed through eleven editions. There has been no departure from the original object of keeping the book elementary, although many sections have been rewritten. Among the added sections is one on botulism which is, indeed, brief. In view of the extensive investigation of botulism that has recently been made, even a book designed to be brief might have been a little more liberal with this subject. The same comment applies to Rocky Mountain spotted fever, which now is known to occur in several Western states. The treatment of this disease is covered in five words, and the experimental work of Noguchi and others on the prophylaxis of spotted fever is omitted. Carbon tetrachlorid is not mentioned in the treatment of hookworm disease. Fehling's test for sugar in urine which, to quote Folin, is only of historical interest, is given, and the more dependable and generally recognized Benedict's test is omitted. Macleod is given credit for the "preparation" of insulin in the seven lines devoted to this subject, and Banting is not mentioned. The author still calls the yellow fever mosquito *Stegomyia calopus*, and he believes that "the minute bacillus described by Pfeiffer in 1892" is generally considered to be the exciting cause of influenza. Certain subjects are discussed at some length; for example, tuberculosis, twelve pages; typhoid, seven; but, on the whole, the book is not enough up to date to be recommended for students.

INDIAN THERAPEUTICS (for Medical Practitioners). By Dr. Damodar Vasudeo Sandu, G.P.A.C., L.M.S. Paper. Pp. 91. Bombay: V.B. K. Sandu, 1923.

This booklet, including a price list, represents an attempt on the part of a pharmacal manufacturing firm to arouse interest in Ayurved, or the Aryan Medical Science, in part by appeal to national Hindu pride and prejudice. "The Hindu physicians were far advanced and were unrivalled in all the branches of medicine, when . . . the Britons were savages and used to go about naked. . . . The Hindu Medicine is the foundation upon which the building of the European medical science has been constructed. . . . The British rule marked an era of the downfall of this science," and "it is the bounden duty of the Indian graduates in medicine and science to carry on sympathetically, by modern means, experiments and research work and to render an appearance of up-to-date and living science to the system of their forefathers." This is a consummation devoutly to be wished, as the presentation given is nothing more than a hodgepodge of statements of the symptoms and conditions for which the various medicines are supposed to be useful, such as may be found ad nauseam in ancient eclectic and homeopathic literature.

INTRODUCTION TO MEDICAL BIOMETRY AND STATISTICS. By Raymond Pearl, Professor of Biometry and Vital Statistics in the School of Hygiene and Public Health, the Johns Hopkins University. Cloth. Price, $5 net. Pp. 379, with 71 illustrations. Philadelphia: W. B. Saunders Company, 1923.

THE PRINCIPLES OF VITAL STATISTICS. By I. S. Falk, Ph.D., Department of Public Health, Yale University. Cloth. Price, $2.50, net. Pp. 258, with 29 illustrations. Philadelphia: W. B. Saunders Company, 1923.

Probably no scientific literature is more subject to mismanipulation of figures and to unwarranted interpretations than is that of medicine. It is well known that physicians frequently err in conclusions derived from statistical studies. Raymond Pearl is head of a department in the school of Hygiene and Public Health of the Johns Hopkins University, which is concerned with teaching physicians proper methods in the measurement of results. The present book is essentially a text-book for medical men in such work. Pearl is convinced that there is no reason why medicine should not become an exact science in the same sense as physics and chemistry, provided quantitative methods of thought and action are made an integral part of medical training. Fundamental to such methods of thought is the knowledge of the existence of that special factor of biometry known as "probable error." An interesting chapter concerns the history of the statistical method. There follows a discussion of the raw data of biostatistics, particularly as they concern the determination of causes of death. A special chapter concerns also the method of tabular data, and illustrates modern ways of mechanical tabulation on a large scale. Of great practical value is the section on graphic presentation of statistical data. Here the reader is taught how to draw up charts so as to make clear at a glance the results of the study of large numbers of figures. Readers are then taught how to

calculate mortality rates and how to interpret tables. The final chapter concerns the difficult mathematical calculations involved in allowing for error and variations.

Falk is a lecturer on vital statistics in the department of public health in Yale University. His book is much more popular in tone than is that of Pearl. He deals little with methods, but describes the more important procedures and sources of information commonly used in statistical inquiries. He also discusses briefly certain cautions which the untrained statistician must observe. The book is exceedingly readable and informative on many points not directly related to its subject. Physicians will do well to bear in mind particularly the four rules laid down by Quetelet for statistical work:

1. Never have preconceived ideas as to what the figures are to prove.
2. In a statistical study never reject a number merely because it varies considerably from the average or because it appears to contradict what you expect.
3. Try to weigh and record all the possible causes of an event, and do not attribute to one what is merely the result of the combination of several.
4. Never compare data which have nothing in common.

They should also remember the three kinds of mistakes that afflict statistical data:

1. Working with incomplete or inaccurate data.
2. Inaccurate arithmetic or copying of data, or other errors of analysis.
3. Unsound interpretations of statistical results.

MEMBRES ET CEINTURES DES VERTÈBRES TÉTRAPODES. By L. Vialleton. Librairie Octavo Doin, Paris, 1924.

In an imposing volume of 710 pages, the author has given an exhaustive study of the girdle an appendages of the tetrapod vertebrates. No such survey is available anywhere else in the literature. The author has brought together work on this subject in splendid form. He has added much from his own researches, and has displayed good judgment in combining the material so that the anatomist who seeks information will find here a wealth of detail at his disposal. No teacher or worker interested in vertebrate problems can afford to overlook Professor Vialleton's discussion of the general questions involved in the structure of the girdle and appendages and in the interrelationship of the parts. The various theories that have been advanced by Gegenbaur, Dohrn, Balfour and others in the effort to interpret the nature and origin of these structures are peculiarly well presented. It is perhaps hardly necessary to state that the author has incorporated fully in his discussion the work of human anatomists, and a study of this book will yield much of interest and value for the work of the medical school on human anatomy.

PHARMACEUTICAL BOTANY. A Text-Book for Students of Pharmacy and General Science. By Heber W. Youngken, A.M., M.S., Ph.D., Professor of Botany, Pharmacognosy and Materia Medica in the Massachusetts College of Pharmacy. Fourth edition. Cloth. Price, $4. Pp. 537, with 263 illustrations. Philadelphia: P. Blakiston's Son & Co., 1923.

This book presents a general but brief course in botany for students in pharmacy who cannot elect to do botanical research. The subject matter includes laboratory technic in the preparation of reagents, in sectioning, in mounting and in the use of the microscope. The microchemical behavior of the more important starches, alkaloids and glucosids that come within the purview of the pharmacist are described. The chapter on taxonomy includes much information about drugs that is ordinarily found in works on pharmacognasy. This would prove of practical use for physicians.

HABITUAL CONSTIPATION, ITS CAUSES, CONSEQUENCES, PREVENTION AND RATIONAL TREATMENT. Set Forth in Non Technical Language. By Ismar Boas, M.D., Professor of Medicine in Berlin. Translated by Thomas L. Stedman, M.D. Cloth. Price, $2. Pp. 299. New York: Funk & Wagnalls Company, 1923.

This was written for the layman to supplement the physician's advice and render it intelligible, so that the patient will follow the physician's direction with docility and good will. The author believes that a roentgen-ray examination affords an indispensable means of determining the true character of the disturbance, and that chronic constipation is a disease that need not exist if it is combated with sufficient energy and understanding.

# Medicolegal

## Shortcomings from Hysteria Not "Cruel Treatment"

*(McDowell v. McDowell (Wash.), 216 Pac. R. 11)*

The Supreme Court of Washington, in reversing a decree of divorce obtained by the plaintiff husband and in remanding the cause with instructions to dismiss the action, says that the only ground given by the statutes of that state on which a divorce could possibly be granted here was, "cruel treatment of either party by the other, or personal indignities rendering life burdensome." The findings of the trial court on which the decree of divorce was granted were that during the greater part of the period that the parties had been married, which was since June, 1915, the defendant had failed and neglected to take care of the home, claiming to be ill anl physically unable to perform her household duties; that the plaintiff had been compelled to do much of the work around their home, even to caring for their little child; that the defendant was difficult to please as to the location and kind of home, and that the plaintiff in trying to please her had moved frequently; that about November, 1921, the defendant insisted on going to her parental home; and that it appeared that the defendant was at no time seriously ill, except perhaps when for a few weeks she had the influenza, and at the time of the birth of the child mentioned, but was really more hysterical and nervous than sick. But the testimony showed that during the first two years of marriage the parties lived together very happily, the wife satisfactorily performing all her houshold duties and being in reasonably good health; that subsequent to 1917 she had had two miscarriages, and had given birth to the one child; that she had been told by reputable physicians that she had tuberculosis, for which she received treatment for a long while; that she had had all of her teeth removed at the suggestion of her physicians; and that she had had a bad attack of influenza. The chief complaint against her was that after the first two years of marriage she kept to her bed a great deal of the time and failed to perform many of the ordinary household duties; that in her search for health it was necessary for the parties to move their home a number of times to different places in the city; that she was treated by a number of physicians at an expense difficult for her husband to meet; and that she finally left her home against the will of her husband and went to live with her parents. But the supreme court is convinced that she was and had been too sick to perform her ordinary household duties, or, if not, that she was entirely honest in her belief that she was and had been sick, and that when she went to live with her parents the move was only temporary, for the purpose of regaining her health. The facts found by the trial court and by the supreme court did not constitute cruel treatment under the statute. Cruel treatment sufficient to authorize a divorce is something very much more than sickness, incapacitating the wife from performing the usual domestic duties; it is also something more than failure to perform those duties because, as the trial court's finding said, she "was really more hysterical and nervous than sick," particularly when such condition followed hard on the ailments that had previously befallen her.

## Negligent Treatment of Hand for Broken Needle—Testimony of Attendant

*(Kapherr v. Schmidt (N. J.), 121 Atl. R. 617)*

The Court of Errors and Appeals of New Jersey, in affirming a judgment for $2,500 damages in favor of the plaintiff, says that she, having accidentally broken a needle in her right hand, called on the defendant physician to treat the injury. He made an incision and probed the wound in an effort to locate the disrupted needle, but without avail. At his suggestion the plaintiff returned the next day, and a roentgenogram was taken which showed the broken needle near the wrist. The defendant thereafter undertook an operation at the plaintiff's home, in the presence of another physi-

cian who administered the ether, for a period of over an hour, during which time the defendant cut the hand in various directions in his effort to reach the needle. Failing to extract it, he discontinued his efforts and, obtaining a piece of wire from a drawer in the plaintiff's kitchen, and, as was contended, without proper sterilization, inserted the wire in the open wound. He then packed the wound, bandaged the hand and did nothing further in the way of operating. He called subsequently and looked at the hand, which showed symptoms of a hemorrhage, from which the plaintiff suffered intensely. She urged him during his visits, and while he was dressing the hand, to subject her during that procedure to another anesthetic; and also urged him to call in another physician. This he failed to do, but on the same evening she called in another physician, who took her in charge, after which she was taken to a hospital where, under the administration of ether, another operation was performed, and the broken needle extracted. At that time it was observed that severe infection of the hand had set in, and when the wound finally healed two of the fingers were curved into the palm of the hand, and the plaintiff was unable to move them for any practical purpose, while the hand itself was so severely shattered and disfigured that she become unable to follow her usual occupation for nearly eight months. She alleged as the gravamen of her case the defendant's negligence in the treatment of her hand.

It was insisted for reversal that a verdict should have been directed for the defendant, because of the absence of proved negligence on his part. At the trial the issue was rather narrowed to an inquiry as to whether the infection of the hand was due to the defendant's negligence or to other causes not related to the treatment. The case was tried almost entirely on that theory, and no objection was taken by the defendant to that course of procedure. In such a situation, where parties, without objection, try and submit the question at issue on a theory apparently satisfactory to themselves, and suffer the case to go to the jury on the legal theory thus adopted, such course of procedure becomes the law of the case, and it is too late, on appeal, for either party for the first time to question the legal propriety of the course thus pursued. In any event, to sustain a verdict otherwise regular, an amendment will be ordered here, if necessary, to conform the allegations to the proof. There was ample proof, also, for a jury to consider, in harmony with the plaintiff's distinct allegation that, owing to the defendant's negligence in operating, the needle was suffered to remain in the plaintiff's hand, until finally extracted at the hospital by another surgeon. The weight and credibility of this testimony, when compared with that offered by the defendant, manifestly was for the jury, and the refusal of the trial court to direct a verdict, under the circumstances, was therefore proper.

A woman attendant, who was present during the final operation by the defendant, having testified to facts within her observation only, any further testimony elucidating the defendant's preparation for the operation not within her knowledge was part of the defendant's case, where such testimony on cross-examination could not be elicited as substantive proof from the plaintiff's witnesses. What this witness observed was obviously testimony of the highest order; what she did not and could not observe must have been in the last analysis mere conjecture or hearsay; and manifestly in either aspect would be objectionable from every evidential point of view.

### Loss of Eye Affording Only Perception of Light

*(Ladd v. Foster Bros. Mfg. Co. et al. (N. Y.), 200 N. Y. Supp. 258)*

The Supreme Court of New York, Appellate Division, Third Department, holds that, under the workmen's compensation law of that state, when a man, whose right eye had been so injured that it afforded only perception of light, injured the defective eye so that it had to be removed, he was properly denied an award for the loss of the eye. But the court thinks that he may have suffered a permanent loss of earning power by virtue of his loss of light perception, and it is of the opinion also that he may have suffered a serious facial disfigurement, for which the state industrial board might in its discretion make an award.

# *Society Proceedings*

## COMING MEETINGS

American Congress on Internal Medicine, St. Louis, Feb. 18. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.
Sioux Valley Medical Association, Sioux City, Iowa, Jan. 22-24. Dr. Ralph M. Waters, 107 Gilman Terrace, Sioux City, Iowa, Secretary.

## SOUTHERN SURGICAL ASSOCIATION

*Thirty-Sixth Annual Meeting, held at White Sulphur Springs, W. Va., Dec. 11-13, 1923*

The President, DR. JAMES F. MITCHELL, Washington, D. C., in the Chair

### Pilonidal Sinus (Coccygeal Fistula)

DR. HARVEY B. STONE, Baltimore: The diagnosis once established, the problem of treatment is easily solved. It consists in the complete excision of the whole tract with its entire wall. No case can be considered permanently cured until the sinus wall is removed. In cases seen before infection has occurred, excision should be performed. When first seen after infection, drainage following excision is necessary. The location of the lesion is such that healing by granulation progresses slowly. Nonsurgical treatment is usually a waste of time.

### Gas Bacillus Infection

DR. E. P. HOGAN, Birmingham, Ala.: An icteric hue to the sclera and skin was noticed in my six cases. It is possible that this is characteristic of all gas bacillus infection in which the system is invaded by the toxins. Intra-abdominal gas bacillus infection may occur which may not be recognized during life and yet death may be caused by this infection. All potential gas bacillus infection injuries should receive early or immediate surgical treatment. Prophylactic and therapeutic serotherapy is established as adjuncts to surgery.

### Treatment of Empyema

DR. ALEXIUS MCGLANNAN, Baltimore: With an exudate that is definitely purulent, drainage is the proper treatment. The location of the empyema as well as the manner in which the cavity will be obliterated must be considered. Usually the history and the physical signs of fluid in the chest lead to aspiration, and the character of the fluid aspirated makes the diagnosis. In other suspected cases, the physical signs are indefinite or the aspiration is unsuccessful. In such cases, roentgen-ray examination of the chest is of the greatest value in localizing the lesion. Two factors are involved in the healing of an empyema: the sterilization of the cavity and its obliteration. Both will take place in time, if proper drainage is instituted—the former according to the relative resistance of the patient and the virulence of the invading organism, the latter as a result of the expansion of the lung, the bulging of the diaphragm and mediastinum, and the collapse of the chest wall.

### Cure of Incontinence of Urine in Women

DR. C. JEFF MILLER, New Orleans: Of late years it has been my practice to combine Kelly's technic with the anterior colpoplasty described by John Clark. In many instances the careful restoration of the fascia about the vesical neck, without any attempt to narrow the sphincter, has been eminently successful, which has convinced me more than ever that the fascia is largely at fault, and that proper support is all that is necessary. Practically all of these cases require also a careful readjustment of the entire vaginal sheet, as is done in the ordinary cystocele operation. Supporting the sagging, weakened fascia by a pessary will frequently relieve the milder types of incontinence, and occasionally even the severer forms. The simple Hodge or Smith, or the ring passary, which is very easily adjusted, has in my hands yielded as good results as the Gehrung pessary or other types difficult to apply.

### Drainage of Subcortical Brain Abscess

DR. C. C. COLEMAN, Richmond, Va.: I have seen ten encapsulated subcortical abscesses with three deaths. Operation

for drainage of the abscesses was done on nine patients. One patient died during the first visit, from general meningitis following a ruptured left frontal abscess. A second patient was operated on after the onset of meningitis, and an abscess of the upper left temporal lobe was found and drained. Purulent spinal fluid was removed at lumbar puncture before operation. The third fatal case was a patient with three right frontal abscesses. This patient was admitted to the hospital with a large temporal fungus following a decompression performed in another hospital for the relief of general pressure. One abscess was localized and drained, but two were overlooked. The fungus could not be controlled, and the patient died from septic encephalitis about six weeks after coming under our observation. Seven of the nine patients operated on recovered. One patient is still in the hospital but seems to be free of abscess symptoms. She had an enormous fungus cerebri when she was admitted to the hospital following drainage of a right parietal lobe abscess from osteomyelitis of the skull. Two additional abscesses were drained in this case. Since she has been under my care, this patient, and another who has been discharged from the hospital for three months, have developed left hemiplegia. One patient has a slight osteomyelitis of the skull following a flap operation done one year ago. Another patient with left frontal abscess recovered about a year ago from abscess symptoms, but is troubled with headache.

### Surgical Drainage of the Peritoneum

DR. ROBERT LEE PAYNE, Norfolk, Va.: I believe that drainage takes place along the sides and about, rather than through, the agent used. The principle involved is to provide and maintain, for the proper period of time, an outlet. Drainage agents that are soft and flexible are less liable to make pressure along their course; therefore, the cigaret type is preferable to tubes. In 263 cases of peritonitis there was found at operation a localized peritonitis (varying from the mild fibrinous type to abscesses, gangrene of the bowel, leakage and soiling) present in 209. Five of these patients died. In the remaining fifty-four cases there was found at operation a general diffuse suppurative peritonitis. Thirty-eight of these patients recovered, giving a 29.6 per cent. mortality. The mortality in the 263 cases of peritonitis, local and general, all drained locally at the source of infection, was 6 per cent.

### Tuberculous Cyst of Spleen; Splenectomy; Recovery

DR. CHARLES H. PECK, New York: Primary tuberculosis of the spleen, though rare, is a distinct entity, and is curable by operation in favorable cases. Without splenectomy, a fatal termination is inevitable. Splenectomy is indicated in certain cases of secondary tuberculosis of the spleen, when the splenic lesion is predominant and the supposed primary lesion is a healed tuberculosis or susceptible of cure. Polycythemia occurs in a certain percentage of cases and probably adds to the gravity of the prognosis, but does not contraindicate operation when the splenic tuberculosis is the dominant factor in the case.

### Undescended Testicle

DR. CHARLES G. MIXTER, Boston: Operations for undescended testicle in childhood may be expected to yield from 75 to 80 per cent. of satisfactory results; the testicle remains in the scrotum, and subsequently atrophy does not ensue. To attain this result, the spermatic circulation should be preserved and the cord lengthened sufficiently to allow the testicle to be placed in the scrotum without tension. In a certain number of cases, particularly those of the intra-abdominal variety, it will be necessary to section the spermatic vessels. When this procedure is unavoidable, atrophy occurs in 85 per cent. of the testes. It is indicated in only about 10 per cent. of all cases. Atrophy may ensue when the spermatic vessels are not divided. This is probably due to accidental tearing of some of the trunks at operation or inclusion in the stitches, if the cord is anchored to Poupart's ligament. Operation may be undertaken at any age with the expectation of a good result, if the accompanying hernia becomes troublesome or other indications arise. The preferable age for operation is between 5 and 12 years. At an earlier age, the structures are so delicate that injury to the spermatic vessels is difficult to avoid. Orchidectomy should not be done in childhood. Replacement of the testis in the abdomen should also be avoided on account of the risk of a future malignancy. In even the most difficult case, section of the spermatic vessels and transposition of the vas and its accompanying vessels behind the deep epigastric will permit the testis to be placed in the scrotum. No light has been thrown on the spermatogenetic function of the undescended testis subsequent to an operation performed before puberty. It is hoped that, later, the bilateral cases of this type may afford some valuable data. In no instance has a recurrence of the hernia been observed.

### Principles for the Operation for Carcinoma of the Rectum

DR. ROBERT C. COFFEY, Portland, Ore.: My contention for the last ten years has been that most of the fine points of the operation should be done at the first operation, namely, the abdomen should be explored for metastases; the colostomy should be performed carefully; complete devascularization from the abdominal side by cutting off the superior hemorrhoidal and sigmoid vessels, and pushing down all the fat which includes the lymphatics and return venous circulation down to the tip of the coccyx. In my original work I added to this the ligation of both internal iliac arteries. This was done in four cases. These patients survived the operation, but a great deal of sloughing took place. I have seen two of the four patients operated on by this method more than nine years ago, and they are in perfect condition. The next step is to invert, remove or clamp the intestine down to within a short distance of the growth, and interpose a layer of gauze wicks or rubber tissue between the intestine and fat which has been pushed down and the organs above. Finally, the floor of the peritoneal sac is completely closed with sutures, and usually the space between the sigmoid and the lateral wall of the lower abdomen is closed also with sutures.

### Surgical Treatment of Recurring Attacks of Acidosis in Children

DR. STUART MCGUIRE, Richmond, Va.: Certain children have recurring attacks of acidosis usually at intervals of three or four weeks. These patients are nervous, high-strung subjects, and the attacks are precipitated by constipation, imprudence in eating, excessive fatigue, overexcitement, exposure to cold, or some acute illness. During the interval between attacks, the child may have good digestion and appear to be in normal health. The most important factor in treatment is proper regulation of the diet, which should be low in fats and high in carbohydrates. A tendency to acidosis is created by local foci of infection; hence, diseased tonsils should be removed, abscessed teeth extracted, discharging ears treated and suppurative processes in glands, joints or bones properly dealt with. In some cases, despite all that can be done, the attacks continue to recur and the child goes from bad to worse.

### Adenomyoma of the Uterus

DR. CHARLES R. ROBINS, Richmond, Va.: Many cases of painful acquired dysmenorrhea, especially when associated with noninfective adhesions, will be found to be due to the development of adenomyoma. Conservative operations do not appear to relieve. The tendency to the formation of dense adhesions seems to continue. In the advanced cases, a radical removal of the pelvic contents appears to offer the only hope of cure.

### Carcinoma of Stomach in Young People

DR. RAYMOND P. SULLIVAN, New York: Operative treatment of gastric cancer in very young patients is indicated in all those cases in which the removal of the tumor itself and its immediate metastases seems to be possible, and also in those cases in which the neoplasm has led to stricture of the cardiac or pyloric orifice of the stomach. Contraindications to surgical intervention in any form may be due to the general condition of the patient or to the behavior of the malignant tumor itself. The purely medical treatment of these cases must of necessity be limited to the treatment of symptoms, especially pain and starvation. Total or partial

gastrectomy is always the procedure for consideration in these cases. Partial gastrectomy, when possible, is the procedure of choice. Gastric carcinoma in young people should be considered more often. The sudden onset, rapid course with persistent febrile temperature and progressive anemia without cachexia in a young person complaining of gastric distress and pain should raise the suspicion of carcinoma.

### Focal Infection

DR. ROBERT L. RHODES, Augusta, Ga.: Focal infections around the head are quite commonly associated with cervical adenitis; but that they might produce a toxic lymphadenitis of a single extremity or cellulitis with all the cardinal signs of acute inflammation was rather a revelation to me. I would urge a close physical examination and the careful weighing of facts obtained before employing radical treatment in such cases of obscure local manifestation, whether cellulitis or lymphangitis.

### Splenectomy as a Treatment for Purpura Hemorrhagica

DR. ISIDORE COHN, New Orleans: Splenectomy as a means of cure for purpura hemorrhagica has proved its value. Because of the loose manner in which the term purpura is used, the operation may at times be used in cases in which simple means will be more efficacious, and, in fact, splenectomy would be contraindicated.

### Splenectomy in Splenic Anemia

DR. FRANK K. BOLAND, Atlanta, Ga.: I have had two cases in which a splenectomy was done. That these cases belong to the group of primary splenic anemia seemed to be proved: (1) from the pathologic changes present in the removed organs; (2) from the fact that the patients apparently are cured. Certainly the results of the operation are satisfactory, if not brilliant, at times, especially if done early, before the liver and other viscera are implicated.

### Intestinal Anastomosis

DR. RICHARD A. BARR, Nashville, Tenn.: A lateral anastomosis can probably be made with more certainty of security by the inexperienced operator, but it is largely a matter to be decided by taste and temperament. When the colon is involved, there is a difference. The looseness of attachment of the peritoneal coat of the colon, and the complete absence of this coat over wide areas, add to the difficulty of securing peritonization of the suture line. Lack of sufficient bowel for overlapping will at times make end-to-end union of the colon imperative. This form of union is always more pleasing to the surgical taste, and it would be my own preference except for the difficulties mentioned above. It is always possible when lateral anastomosis of the colon is made to put in a second line of reinforcing seromuscular sutures, with their added protection. When there is plenty of colon for overlapping, I make a lateral union, and have a feeling of greater safety from danger of possible leakage at the suture line, though surgically and physiologically the work is less satisfying than end-to-end connection.

### Surgery in Cases of Renal Tuberculosis

DRS. E. STARR JUDD and ALBERT J. SCHOLL, Rochester, Minn.: The kidney was removed by us in 863 cases; exploration only was performed in nine cases. The usual procedure was a simple extraperitoneal lumbar nephrectomy. Subcapsular nephrectomy was performed in thirty-five cases. In most of these cases the kidney was either extensively destroyed or had been operated on previously. Three hundred and fifty-eight (58.6 per cent.) of the 611 patients of whom complete postoperative data were obtainable are cured on an average of four years after operation; 191 (31.2 per cent.) are dead; sixty-two (10.1 per cent.) still have evidence of tuberculosis of the genito-urinary tract. Twenty-three of the 119 patients who died following nephrectomy for unilateral tuberculosis died during the first month after operation. This number represented 2.7 per cent. of 845 nephrectomies. Five patients died of uremia, due either to a nontuberculous infection of the opposite kidney or to chronic nephritis. There were five deaths from peritonitis; in all instances the peritoneum was adherent to the kidney and opened during the course of the operation. In three cases pulmonary complications—pneumonia, empyema and pulmonary embolism, respectively—caused death. One patient died from general septicemia and one from paralytic ileus. Forty-two (25.6 per cent.) of 164 subsequent deaths occurred in the first year; eighty-three (50.6 per cent.) from the second to the fifth, and twenty-one (12 per cent.) from the sixth to the tenth year; thirty-one died from infection of the remaining kidney, which was tuberculous in fifteen. There were five late deaths due to meningitis; twenty-one patients died from general miliary tuberculosis, and twelve from pulmonary tuberculosis; three died from tuberculous peritonitis. The remainder died from causes other than tuberculosis.

### Relative Values of Irradiation and Radical Hysterectomy for Cancer of the Cervix

DRS. JOHN G. CLARK and FRANK B. BLOCK, Philadelphia: A full trial has been made by us of both the radical operation and the treatment with a moderate dosage of irradiation (100 mg. of radium for twenty-four hours), repeated at later intervals once or at most twice, if necessary; and we are convinced that while the latter method has been of immeasurable help in the relief of the inoperable and has effected a cure of a small percentage of patients otherwise doomed, nevertheless, it falls short of an ideal remedy but compares most favorably with the radical operation. The distressing fact is still quite evident that while irradiation is of inestimable value as a therapeutic agent and removes from the surgical domain the great majority of cases of cancer of the cervix, we are not as yet in sight of a real and efficient remedy for this disease in the overwhelming majority of cases.

### Recent Progress in Germicides and Antiseptics

DR. HUGH H. YOUNG, Baltimore: Seven patients were treated by mercurochrome-220 soluble, and five by gentian violet. The mercurochrome cases comprise two cases of septicemia—both desperate cases which were cured and the blood sterilized by intravenous injection of mercurochrome. In two other cases, pyonephritis, the patients' lives undoubtedly were saved, and in two cases pronounced *Bacillus coli* infection, urinary infections of kidney and bladder disappeared almost immediately after a single injection of mercurochrome. Other cases, in which the drug was administered by others, and of which we have not complete notes, show that mercurochrome may be efficacious in streptococcus septicemias as well as in those due to the staphylococcus and colon bacillus. The five cases treated by gentian violet comprise just as desperate cases as some of those treated by mercurochrome, and just as brilliant results. In all of these cases the infecting agent was a staphylococcus, and in our experience, gentian violet has had an apparently selective action against gram-positive staphylococci. The intravenous injection of 5 mg. of gentian violet per kilogram is immediately followed by a most alarming cyanosis, which is simply due to the dye in the blood, which causes no harm and passes off in a few hours. Otherwise, practically no reaction results. Seven, and possibly 10 mg. may be administered, once, without injury. Only by most careful study and painstaking selection and management of the cases can serious blunders be avoided, and it would not be safe as yet to risk not operating on certain fulminating infections which can now be cured by prompt surgery. That certain localized infections may now be safely subjected to the experimental use of intravenous therapy is shown by some of these cases, and there can be no doubt that when blood cultures show a generalized septicemia, mercurochrome and gentian violet can be used with the hope of preventing an otherwise surely fatal ending.

### Removing Hernia from Within

DR. G. PAUL LAROQUE, Richmond, Va.: The high removal of the neck of the sac is the most, if not the only, essential procedure of the operation for the cure of ordinary indirect inguinal hernia of small or moderate size in children, women and young men. For direct and indirect hernia of large size in individuals with imperfect or absent conjoined tendon, plastic operations and suture of certain fascial structures are useful additional measures.

### Partial Gastrectomy for Gastrojejunal Ulcer

DR. DONALD BALFOUR, Rochester, Minn.: Several methods of treatment have been followed in the Mayo Clinic, such as (1) excision of the ulcer, when small, with enlargement of the original anastomosis; (2) cutting off the gastro-enterostomy, excising the lesion, closing the openings in jejunum and stomach, and pyloroplasty; and (3) partial gastrectomy, which has distinct advantages and is the operation of choice when it can be safely performed. A course of preoperative treatment is usually of benefit, and it is advisable to perform as much of the operation as possible under ethylene or local anesthesia. The anastomosis is first mobilized, the gastro-enterostomy disconnected, whatever induration exists in the jejunum excised, and the opening in the jejunum closed. If there has been a fistula into the colon, this is closed and protected as well as possible by wrapping omentum around that segment of the bowel. The stomach is then resected to a point well above the opening of the old gastro-enterostomy, and gastro-intestinal continuity is restored by whatever method is best in the particular case.

## WESTERN SURGICAL ASSOCIATION

*Thirty-Third Annual Meeting, held at Colorado Springs, Dec. 6-8, 1923*

The President, DR. HORACE G. WETHERILL, Denver, in the Chair

### Pseudo-Elephantiasis (Familial Generalized Edema): Six Cases in Four Generations of One Family

DR. ROWLAND H. HARRIS, Battle Creek, Mich.: Pseudo-elephantiasis in the form of familial generalized edema occurred in four generations and in six members of one family. There was hereditary transmission of defective lymphatics and of lowered resistance to the streptococcus, and the disease in each instance was caused by chronic progressive obliterative lymphangitis. Three males and three females were affected, all of whom were born in the United States. From one female of the first generation, the disease descended to the youngest daughter in the second generation, to her three children of the third generation, and to the only son of the youngest of the three in the fourth generation. The disease was not communicated to husband or wife, or to any relative, except in the direct line of descent. Inquiry has not established any occurrence of the disease in earlier generations. Two males and one female in the third generation had surgical operations for the relief of lymph stasis in the lower extremities. In one of these the disease progressed to almost complete obliteration of the thoracic duct with pleural and peritoneal effusions requiring repeated paracentesis, and finally came to necropsy, which is the basis for the pathologic diagnosis of the disease.

### Unusual Diverticula of the Peritoneum

DR. ROLAND HILL, St. Louis: Definite diverticula of the peritoneum in which there are marked sacculations are among the extremely rare conditions to be found in the abdominal cavity. So far as I can learn, these peculiar conditions have always been associated with hernia. Two cases seen by me, while very different in size and location, had one point in common, namely, that in each case there was an opening of small size in the mesentery, and the peritoneal layers seemed as though they had been pushed forward in front of the small bowel and enlarged into these abnormal sacs. It seemed unfortunate that the exact attachment of the layers of the larger sac should not be defined absolutely. This was impossible to do without making an incision much larger than the condition justified. The second case was undoubtedly formed as a hernia, but the first one may have been produced by some unusual error in development.

### Acute Internal Intestinal Obstruction

DR. W. D. HAINES, Cincinnati: Enterostomy done under local anesthesia offers a wide margin of safety over complete primary operation in the average physical condition for which operation is performed for the relief of acute internal intestinal obstruction. The subject of obstruction must receive further study and be rewritten ere we can make further progress in the management and obtain results comparable to those obtained in other surgical emergencies.

### Lipoma of the Thigh

DR. KELLOGG SPEED, Chicago: Clinically, lipoma or lipomyxoma of the thigh is of slow growth. Its surface is smooth and rarely lobulated; it is movable unless tied down by overlying adjacent tissues, which it may displace and infiltrate. On palpation, a feeling of semifluctuation is found and there is neither pain nor tenderness present. At a glance the tumor may appear to have malignant characteristics. On the skin surface may be found dilated veins. Tumors of long continued growth appear fixed and are clinically classed as sarcoma. One of my patients had an infected pressure sore on the surface of the mass from which a foul discharge emanated, lending at once a sarcomatous appearance to the mass. The semifluctuant sensation found on palpation may induce the surgeon to insert an aspirating needle in hopes of discovering a cyst.

### Localized Periosteal Sarcoma of the Tibia

DR. FRED F. ATTIX, Lewistown, Mont.: In selected cases of localized osteogenic sarcoma of the extremity, the surgeon is justified in treating the case with the method of wide excision and cautery of the involved or suspected area, subsequently using radium, deep heavy roentgen-ray therapy and other methods that may be helpful in the attempt to prevent local recurrence and metastasis, especially to the lungs, early in the onset of the disease. By advocating a lesser surgical procedure than amputation, the early consent of the patient can be obtained more readily. The growth can be examined for purposes of gross and microscopic diagnosis. It is advisable to make early and frequent roentgenograms of the chest and extremities in suspected cases for immediate and future study, also submitting them for expert interpretation and advice, thereby preventing unnecessary amputation of the involved extremity.

### Treatment of Surgical Tuberculosis of the Genito-Urinary Tract

DR. VERNE C. HUNT, Rochester, Minn.: Tuberculosis elsewhere in the body, associated with genito-urinary tuberculosis, is common; and from the high incidence of pulmonary tuberculosis, active, quiescent, or healed, noted at necropsy, it would seem that genito-urinary tuberculosis is probably usually hematogenous in origin, secondary to pulmonary infection. The kidney is generally accepted as the first part of the urinary tract to become affected. The preponderance of evidence supports the theory that the epididymis is the primary seat of tuberculosis in the seminal tract, and that the vesicles and prostate are involved secondarily. The presence of active, quiescent or healed pulmonary tuberculosis, or other tuberculous lesions associated with a unilateral renal tuberculosis, does not necessarily contraindicate nephrectomy, and operation is advisable in the absence of miliary tuberculosis when the tuberculous kidney is the major tuberculous lesion. The primary mortality rate of nephrectomy for renal tuberculosis is less than 2 per cent., and the late mortality rate of 20 per cent. within five years, with 80 per cent. recovery and 60 per cent. complete cure, recommends the operation in the presence of associated tuberculosis. While subcapsular nephrectomy is the operation of choice, it is inadequate in cases of extensive renal tuberculosis. It is necessary to remove all involved perirenal fat. The use of drainage tubes after nephrectomy for renal tuberculosis is as inadvisable as for tuberculous infection elsewhere. In tuberculosis of the seminal tract there is a tendency for epididymitis to become bilateral. In 63.3 per cent. of our cases, tuberculous epididymitis was bilateral. Primary tuberculosis of the testis is exceedingly rare; it is usually secondary to the epididymal infection. Orchidectomy is not justifiable as a routine procedure for tuberculous epididymitis. Those inclined to consider the epididymis the primary source of infection accept the conservative method of epididymectomy, while those who regard the seminal vesicles and prostate as the primary source advocate the radical operation of excision

of the epididymis, vas, seminal vesicles, and prostate when involved. The excellent results of the conservative operation do not seem to justify the radical operation. The quite universal result has been that, after epididymectomy, the disease in the vesicles and prostate tends to subside.

### Treatment of Toxemia of Intestinal Obstruction

DR. THOMAS G. ORR, Kansas City, Mo.: My interest in the toxemia of intestinal obstruction was stimulated by the study of the blood and urine of three clinical cases presenting marked postoperative reactions following gastro-enterostomy. In these cases was found a rise in the blood nonprotein and urea nitrogen, a rise in the carbon dioxid combining power of the blood plasma, and a rapid fall in the blood chlorids, coincident with an increase in the nonprotein nitrogen and an almost complete disappearance of the chlorids in the urine. These findings we have considered to be due to a toxemia produced by an obstruction or partial obstruction of the duodenum associated in some way with the gastro-enterostomy. Physiologic solution of sodium chlorid does not contain a sufficient quantity of the salt to maintain the chlorids of the blood at a level high enough to prevent the toxemia of intestinal obstruction. I have been using a 3 per cent. solution under the skin, which has proved very satisfactory. The alkalosis appears to be but an incident in the chlorid metabolism, and is reduced by the administration of chlorids. In the past, some of us considered the dry tongue, rapid pulse and vomiting in these cases as evidence of acidosis, and have given alkalis. In the presence of an existing overabundance of alkalis in the blood it is obvious that such salts are contraindicated.

### Chronic Sclerosing Osteitis

DR. MELVIN S. HENDERSON, Rochester, Minn.: Chronic proliferative sclerosing osteitis is a definite clinical entity, and is occasionally mistaken for sarcoma. Of thirty cases observed, sixteen involved the tibia, ten the femur, two the fibula, one case the ulna, and one the metacarpal. The majority of patients were males under 30 years of age. The cause of the condition is probably a low grade infection. Roentgen-ray findings are usually fusiform spindle shaped enlargement of the bone, proliferative and sclerotic, with a narrowing of the medullary cavity; whereas the typical picture of sarcoma is destructive, the outline is usually irregular and the bone is rarefied, with no narrowing of the medullary cavity. Treatment is directed toward obtaining better circulation, and is accomplished either by guttering the bone, or drilling multiple drill holes. Relief is usually afforded by these measures, but it is not unusual to have a recurrence, and certain cases seem to resist all methods of treatment.

### Syphilitic Stricture of the Rectum Treated by Excision of the Rectum

DR. WILLIAM E. LEIGHTON, St. Louis: Sixty-five malignant strictures and seventeen nonmalignant strictures of the rectum were recorded at the Barnard Free Skin and Cancer Hospital. Of the seventeen nonmalignant strictures, all with one exception gave a history of syphilis and the patients admitted infection or had a positive Wassermann reaction. Three patients had had colostomies before coming to the clinic, and the rectal condition was unimproved. Four of these patients were in such a miserable condition that they readily accepted the relief that a radical operation afforded. Three of these patients had a preliminary colostomy. One of these later said she would rather die than continue with a colostomy, and readily consented to a combined abdominal and perineal operation. The colostomy was closed and the sigmoid was brought out through the anus and attached to the skin margins. A perfect cure, with restoration of function resulted. In the other two cases, because of involvement of the sphincter, a perineal excision was made, including the sphincter, and the colostomy was left permanent.

### Torsion Volvulus of Right Colon

DR. ELMER D. TWYMAN, Kansas City, Mo.: I have seen five of these cases. It seems very easy to overlook them. They may even fail of recognition on the operating table. The differential diagnosis must consider: (1) intestinal obstruction other than colonic; (2) obstruction of the left colon; (3) obstructions outside the wall, such as purely congenital bands, obstructive adhesions and inflammatory bands, pressures by tumors, exudates, etc.; (4) obstructions within the colon or its walls: (*a*) congenital malformation, megalocecum, fibrous contractures; (*b*) spasmodic contracture of the cecocolic-sphincteric tract; (*c*) inflammatory, simple or tuberculous, and (*b*) cancerous. It is obviously necessary in judging the dilated cecum and deciding on its removal, fixation, plication or drainage, to consider these factors, as an intramural fibrotic change will still be actively obstructive, even though rerotation and fixation are accomplished.

### Syphilitic Ulcer of the Small Intestine

DR. T. F. RIGGS, Pierre, S. D.: Obviously, diagnosis of syphilis of the small intestine may be difficult, since the symptoms vary with the type and location of the lesion. In considering the field of surgery in syphilis of the intestinal tract, one appreciates Willmoth's classification according to symptoms, the order of which I reverse, believing that by so doing the order of clinical frequency is best represented: (1) those with nausea, vomiting and diarrhea; (2) those with definite digestive disturbance associated with pain or distress; (3) those indicating ulcer or stenosis; (4) those simulating carcinoma, with palpable tumor. It is evident that surgery is rarely, if ever, necessary or justifiable in the first group, but that with each succeeding group its opportunities for good increase, especially if coordinated with correct diagnosis and proper treatment.

### Diagnosis and Treatment of Right Coloptosis and Complications

DR. E. P. QUAIN, Bismarck, N. D.: Deval's classification of the types of coloptosis is most practical. An especially important manifestation of ccloptosis is that produced by cecocolon mobile in association with pericolic membranes. The condition is usually diagnosed chronic appendicitis, and appendectomy is frequently done. After operation the symptoms are likely to occur. Since the symptoms are due chiefly to the dragging effect of the hypermobile cecum, a fixation of the cecum and ascending colon to the muscles of the back is necessary for permanent relief. Nephroptosis, duodenal obstruction, and symptoms resembling cholecystitis are all complications found when the right colon has failed to rotate and to become attached in its normal position. Of special interest is the fact that colonic drag producing symptoms in the upper abdomen is a frequent cause of neurasthenia. Medical treatment consists of the Trendelenburg posture, forced feeding to encourage fat formation, and, later, application of a corset with a properly fitting pad over the lower part of the abdomen. Postoperative results several years after operation in many patients operated on for coloptosis and its complications have been very satisfactory. Only expert laparotomists should practice colofixation.

### Vascular Tumor of the Intestine

DR. ALFRED J. BROWN, Omaha: In twenty cases, two tumors occurred in the duodenum and eleven in the small intestine. In three cases the tumor was in the sigmoid, and in two of these there were multiple tumors. In two cases the tumor was in the rectum, and in one case the entire intestinal tract was involved. In one case, in which the tumor passed by bowel, the site was unknown. In eleven cases the tumor was single, and in nine the number varied from two to hundreds. Five of the tumors were diffuse; seven were encapsulated, and in eight no statement was made. In two cases there was ulceration of the mucous membrane, and in the remaining eighteen cases the mucosa appeared normal even though hemorrhage was a symptom. Seven cases gave no symptoms. Of the remaining thirteen, six patients suffered from gastric or intestinal hemorrhage, one from nausea and epigastric distress with vomiting after eating, one from chronic obstruction, four from acute intestinal obstruction, and in one case the symptoms were not given. Of the acutely obstructed cases, one was relieved by spontaneous passage of the tumor. In one case the tumor caused intussusception and in the other two cases the tumor itself caused obstruction by constricting the lumen of the intestine.

# Current Medical Literature

## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Diseases of Children, Chicago

**26:** 391-501 (Nov.) 1923

*Incidence of Disease in One Thousand Infants Under Two Years of Age. R. D. Curtis and G. Taylor, Boston.—p. 391.
*Recurring Cardiac Infections in Children with Chronic Valvular Disease. F. M. Smith and G. K. Stulik, Chicago.—p. 396.
*Hydrochloric Acid Milk in Infant Feeding. H. K. Faber, San Francisco.—p. 401.
*Neoplasms of Mediastinum in Infancy and Childhood. W. Rosenson, New York.—p. 411.
*Chronic Ulcerative Colitis in Childhood. H. F. Helmholz, Rochester, Minn.—p. 418.
*Fatal Case of Keratomalacia in Infant, with Postmortem Examination. J. R. Wilson and R. O. DuBois, Boston.—p. 431.
Case of Postscarlatinal Phlebitis. E. J. Huenekens and D. M. Siperstein, Minneapolis.—p. 447.
Allergy to Cow's Milk in Infants with Nutritional Disorders. A. F. Anderson and O. M. Schloss, Boston.—p. 451.
Hydrogen-Ion Concentration of Gastric Contents of Infants. F. L. Babbott, Jr., J. A. Johnston, C. H. Haskins and A. T. Shohl, New Haven, Conn.—p. 475.
Gastric Acidity in Infantile Tetany. F. L. Babbott, Jr., J. A. Johnston and C. H. Haskins, New Haven, Conn.—p. 488.

**Incidence of Disease in Infants.**—One thousand records, selected at random, were analyzed by Curtis and Taylor. All the diseases of the new-born infant were eliminated from this series. Of the 1,000 infants, fifty-one died. The cause of death was unknown in seventeen instances. Sixteen of the remaining thirty-four infants died of pneumonia. Of the remaining eighteen cases, the cause of death was divided among various diseases. Diarrheal diseases did not play a great part in the mortality. Out of 204 cases of diarrhea there were only four deaths. The death rate among the prematurely born was high. Of ten premature infants, three died. Of seven children who contracted diphtheria, three died. The morbidity rate was about nine times as great as the mortality rate. Five hundred and thirty-five of the 1,000 infants were entirely free from disease during the time they were under observation. This varied from twelve to twenty-four months. Of these 535 cases, 318 were entirely breast fed during the whole of their first year of life; while the majority of the remainder were breast fed for at least six months. Of the infants that were bottle fed entirely, 36 per cent. had no disease during the first year. This shows conclusively that there is a much greater chance of illness in the bottle fed than in the breast-fed infant.

**Recurring Cardiac Infections in Children.**—Of eighty children followed by Smith and Stulik during three years, twenty-one had frequent periods of slight fever ranging from 99.2 to 100.4 F. In sixteen of these, the diagnosis of an active cardiac infection was made. In seven instances, the diagnosis was based on finding a conduction defect of the auriculoventricular bundle. Two had premature contractions during periods of fever, one of whom later had definite cardiac dilatation. In the remaining seven, the conclusions concerning the presence of a cardiac infection were based on definite changes in the physical findings of the heart, such as the appearance of a new murmur, a pericardial rub or demonstrable cardiac dilatation. The rate of progression of the cardiac disease was much more rapid and the incidence of severely damaged hearts far greater in the twenty-one children with recurring periods of temperature elevation than in the remaining fifty-nine. To prevent the condition from progressing, the authors advise education of the public, the early elimination of all possible oral and nasopharyngeal infections and the establishment of convalescent homes.

**Hydrochloric Acid Milk in Infant Feeding.**—Faber points out the usefulness of acid modification of milk rather than stressing the value of a particular acid. It may be that hydrochloric acid possesses certain disadvantages, as yet undetermined, and that organic acids which burn to carbon dioxid are preferable. Hydrochloric acid was selected largely because it is the physiologic acid. It is also cheap, easily standardized and everywhere available. Faber has made up samples of artificial lactic acid milk which are as palatable as hydrochloric acid milk, in the corresponding strengths, but has not as yet given them clinical trial. Cow's milk to which one fourth the volume of tenth-normal hydrochloric acid has been added has been used in the majority of cases.

**Neoplasms of Mediastinum in Children.**—Rosenson reports a case of ganglioneuroma of the mediastinum in a girl, aged 8, and reviews thirty-eight cases on record in the literature. In his case there was no extension of the tumor beyond the thorax; nor were there any metastases. Complete extirpation of the ganglioneuroma the author believes will undoubtedly insure a permanent cure.

**Chronic Ulcerative Colitis.**—Five cases of chronic ulcerative colitis in childhood are reported by Helmholz. Two of the patients died. A careful search of the literature has failed to reveal a single article dealing with this subject.

**Fatal Case of Keratomalacia in Infant.**—Wilson and DuBois report the case of an infant, 5 months old, that had been fed exclusively on condensed milk for a long period of time. When the baby first came under observation, it was markedly underdeveloped and emaciated; its skin was dry and had a peculiar waxy feel, and the conjunctivae were dull and the corneas cloudy. In spite of the administration of cod liver oil, the baby's condition grew progressively worse. Corneal ulcers developed, followed by a perforation of the cornea in one eye. Death occurred on the nineteenth day. At necropsy, the eye lesions were the most striking of the few that were observed on gross examination. Microscopic study, however, revealed changes in many organs. In the lachrymal and salivary glands, there were inflammatory lesions; and in the epithelium lining the submaxillary and parotid gland ducts, peculiar cell changes and nuclear inclusion bodies were found. The pancreas showed keratinization of the epithelium in certain ducts, many large and small epithelial lined cystlike cavities, a marked inflammatory process and extensive fibrosis. The lungs showed keratinization of the bronchiectatic cavities, bronchiectatic abscesses and interstitial emphysema. Of peculiar interest was the change of a columner epithelium to a stratified keratinized type found in the uterine mucosa, bronchi and pancreatic ducts, and, to a less marked degree, in one of the ducts of the submaxillary gland and the trachea. To the mechanical effect of desquamated keratinized epithelium, the authors are inclined to attribute the pancreatic cysts and bronchiectases.

### American Journal of Obstetrics and Gynecology, St. Louis

**6:** 517-644 (Nov.) 1923

*Relationship of Uteroplacental Apoplexy to Ablatio Placentae. R. W. Holmes, Chicago.—p. 517.
Placental Infarcts. F. L. Adair, Minneapolis.—p. 552.
*Trend of Modern Obstetrics. What is Danger? How Can It Be Changed? B. M. Anspach, Philadelphia.—p. 566.
*Weight in Pregnancy: Value As Routine Test. C. H. Davis, Milwaukee.—p. 575.
*Simple Method of Testing Patency of Fallopian Tubes. N. S. Heaney, Chicago.—p. 581.
Teaching of Obstetrics and Gynecology. W. B. Hendry, Toronto.—p. 583.
Postmature Child. C. D. O'Keefe, St. Louis.—p. 588.
Pregnancy in a Double Uterus (Uterus Didelphys). J. J. Mundell, Washington, D. C.—p. 601.
Insufflation of Fallopian Tubes by Air and Hand Bulb. R. L. Dickinson, New York.—p. 607.

**Relationship of Uteroplacental Apoplexy to Ablatio Placentae.**—Holmes summarizes the information derived from attendance in twenty-one cases of premature detachment of the normally situated placenta, and one case of uteroplacental apoplexy, together with the impressions obtained from a study of the tabulated cases (306 in number) of Goodell (1869) and Holmes (1901), and the sixty-nine instances of toxemia apoplexy compiled by Willson. Suggestive data have also been obtained from the reports of Harrar of 254 cases of ablatio and of Cragin's 212 cases. Numerous other case reports are cited making an approximate total of 900 cases of the complications under discussion.

**Trend of Modern Obstetrics Wrong.**—Anspach believes that routine induction, routine version and routine prophylactic forceps, increase the danger of childbirth to both mother and

child. Labor should not be started or ended routinely. Induction forceps and version should not be employed unless they are definitely indicated in the individual case for the sake of either the mother or the child. There is an unavoidable fetal mortality in labor of from 1.5 to 2 per cent.; in other words, that proportion of infants at term will be born dead, irrespective of the methods employed. The avoidable fetal mortality in conservative obstetrics may be estimated at about 1 per cent. The woman in labor should have the constant and continuous attendance of a competent obstetrician, throughout labor, no matter when it starts or how long it lasts. Anspach urges that the practice of obstetrics should be carried on by obstetric partnerships; when this practice comes into vogue, objectionable routine methods will be abandoned and maternal and fetal mortality statistics will improve.

**Weight in Pregnancy of Value as Test.**—Routine recording of a patient's weight during pregnancy has given Davis valuable information. He questions the wisdom of permitting the woman who is already overweight to gain excessively during pregnancy. When a woman's weight was within normal limits before pregnancy, her gain should not exceed 20 pounds (9 kg.). If previously underweight she may be allowed a greater gain, up to as much as 30 pounds (13.6 kg.). There is evidence that an excessive gain is dangerous. The woman who is fat should be kept on a carefully limited diet. She may actually reduce to the benefit of herself and the growing fetus. An excessive loss is dangerous, but by good medical and nursing care it can usually be prevented. Naturally the woman who has lost considerable weight during the first trimester may be permitted a greater average weekly gain during the second and third. Eclamptic persons are usually women who have gained weight rapidly during pregnancy. Excessive eating may be one of the factors in the breakdown of metabolism and the development of this toxemia. Urinalysis, blood pressure readings and routine recording of weight possess clinical value.

**Testing Patency of Fallopian Tubes.**—Heaney brings the cervix into view so that a plain 1 ounce all-rubber ear syringe can be adapted to the cervical canal. In rare cases the cervical canal is so patulous that a glass connecting tube is used instead of the medicine dropper. In most cases air readily passes into the peritoneal cavity with a peculiar audible whistling or gurgling sound. Occasionally, light pressure must be used before the air passes. If the tubes are closed, air refuses to pass after the syringe is about half empty. If the syringe empties, there is assurance that the tubes are open. When doubt exists as to regurgitation at the external os, the vagina may be filled with water until the cervix is immersed, or a lubricant may be used in the cervical canal, so that if leakage occurs bubbles will be seen.

## American Journal of Roentgenology and Radium Treatment, New York

**10**: 853-934 (Nov.) 1923


*Radium in Treatment of Leukemias and Hodgkin's Disease. W. H. B. Aikins, Toronto.—p. 853.
*Technic of Radiation Therapy of Esophageal Carcinoma. J. T. Case, Battle Creek, Mich.—p. 859.
*Radium Therapy of Vascular Nevi. H. Morrow and L. R. Taussig, San Francisco.—p. 867.
Instrument for Implantation of Bare Radium Emanation Tubes into Tissues. W. Neill, Jr., Baltimore.—p. 871.
Treatment of Benign Hemorrhage of Female Genito-Urinary Tract by Radiation. H. Schmitz and H. E. Bundy, Chicago.—p. 872.
*Action of Buried Radium on Diseased Thyroids in Man. J. O. Bower and J. H. Clark, Philadelphia.—p. 875.
Comparative Study of Efficiency of Various Filter Materials. A. W. Erskine and S. W. Smith, Cedar Rapids, Iowa.—p. 881.
Water Cooled High Voltage Roentgen-Ray Tube. W. D. Coolidge and C. N. Moore, Schenectady, N. Y.—p. 884.
Measurements of Absorption Coefficient of Water and Aluminum for Hard Roentgen-Rays. E. Lorenz and B. Rayewsky, Frankfort, Germany.—p. 890.
Use of Isodosis Curves in Roentgen-Ray Therapy Showing Inaccuracy of Dessauer Charts. C. Gottlieb, New York.—p. 896.
Advances Made in Roentgen-Ray Study of Gallbladder Disease. D. Palmer, Portland, Ore.—p. 901.
Diverticulum from Anterior Surface of Stomach Near Cardio-Esophageal Junction. L. J. Ravenel, Florence, S. C.—p. 994.
*Complete Pyloric Stenosis from Carcinoma. H. Swanberg, Quincy, Ill. —p. 905.
*Unusual Shadow in Head Interpreted as Calcification in Left Lateral Ventricle. A. R. Taft, Charleston, S. C.—p. 907.
Errors in Diagnosis of Foreign Bodies in Air Passages. P. P. Vinson, Rochester, Minn.—p. 908.
Chinese Bound Feet. J. L. Harvey, Canton, China.—p. 911.
Simple Method of Immobilizing Patients in Standing Position. C. H. Jewett, Clifton Springs, N. Y.—p. 915.
Time Saving Device for Skin Therapy. Sze-Dau Tsiange, Peking, China.—p. 917.


**Radium Therapy of Leukemia.**—Aikins says that in no other fatal disease can so much be done with radium as in the treatment of splenic leukemia. A remission usually follows the first application. Sometimes within twenty-four hours the general condition of the patient improves; he regains his appetite and his sleep. The blood picture is changed for the better in a few days, the white count dropping so quickly on a few occasions that the application of the radium had to be stopped. Last of all, the spleen recedes, generally to the rib margin, seldom farther.

**Radiation Therapy of Esophageal Carcinoma.**—A combination of external roentgen-ray irradiation with the intra-esophageal application of radium, Case asserts, is the ideal method of treating esophageal cancer. Case prefers the method of gastrostomy under local anesthesia, followed in ten days by the placing of the thread, and three or four days later by the first application of radium. A series of roentgen-ray applications through four fields is then given, if it has not already preceded the operation. On about the twentieth and twenty-fifth days, further radium is applied, and a program of watchful waiting instituted.

**Radium Therapy of Vascular Nevi.**—Experience in treating vascular nevi with radium has convinced Morrow and Taussig that the results are better than with carbon dioxid snow or any other therapeutic agent. Radium therapy is most satisfactory in treating nevus vasculosus, next in treating cavernous angioma and least satisfactory for nevus flammeus. Beta rays should be utilized as much as possible.

**Radium Therapy of Thyroid Disease.**—In three cases of thyroid disease—recurrent carcinoma, simple colloid goiter and toxic goiter—Bower and Clark employed comparatively large doses of buried radium to good effect. Comparatively large doses must be given, however, owing to the apparent resistance of thyroid tissue to radium.

**Complete Pyloric Stenosis from Carcinoma.**—Swanberg's case was one of pyloric malignancy, resulting in complete pyloric obstruction with marked gastric dilatation. The pyloric end of the stomach was resected for removal of the carcinoma and a posterior gastro-enterostomy was made. The patient died six months after the operation from recurrence of the carcinoma.

**Calcification of Ventricle Wall Causes Epilepsy.**—Calcification of the wall of the left ventricle was shown by roentgen-ray examination to be the cause of epileptic attacks in Taft's case.

## American Journal of Syphilis, St. Louis

**7**: 617-782 (Oct.) 1923


Diagnosis and Treatment of Syphilis of Nervous System. J. Grinker, Chicago.—p. 617.
*Neurosyphilis. II. Arsenic Content of Spinal Fluid After Intravenous Administration of Silver Arsphenamin in Relation to Type of Neurosyphilis. L. H. Cornwall and C. N. Myers, New York.—p. 629.
Gastric and Intestinal Syphilis. Report of Case. W. E. Gatewood and A. Kolodny, Iowa City.—p. 648.
Paralysis of Seventh Cranial Nerve in Early Constitutional Syphilis. D. W. Montgomery and G. D. Culver, San Francisco.—p. 663.
*Hemianopia as Sole Clinical Feature in Untreated Secondary Syphilis. A. W. S. Sichel and A. R. Fraser, Cape Town, S. A.—p. 665.
Visceral Syphilis. C. G. Cumston, Geneva, Switzerland.—p. 671.
*Wassermann Reaction in Diabetes. R. Rockwood and A. H. Sanford, Rochester, Minn.—p. 679.
Kahn Precipitation Reaction for Syphilis. J. C. Fox, Jr., and E. S. Sanderson, New Haven.—p. 687.
Wassermann Reaction. A. J. Hinkelmann, Oklahoma City.—p. 699.
Controlled Prostitution in Coblenz, Germany. M. A. Reasoner, U. S. Army.—p. 713.
Prevention of Syphilis of Central Nervous System. S. Hata.—p. 720.


**Arsenic Content of Spinal Fluid After Intravenous Injection of Arsphenamin.**—Cornwall and Myers discuss the arsenic content of spinal fluid after the intravenous administration of silver arsphenamin in relation to the type of neurosyphilis.

When the lesions are essentially confined to the mesodermal structures arsenic can be detected in from 80 to 100 per cent. of fluids; as compared with from 60 to 90 per cent. when the ectodermal tissues are involved. The average quantity of arsenic in the spinal fluid in mesodermal syphilis is from 14 to 17 mg. per cent.; in ectodermal, from 4 to 9 mg. per cent. In mesodermal syphilis the quantity of arsenic in the spinal fluid is greatest at intervals of two and seventy-two hours after intravenous administration of silver arsphenamin, the average amount after seventy-two hours being slightly in excess of that found after two hours. In ectodermal neurosyphilis the largest amount is present two hours after intravenous administration, diminishing at subsequent periods.

**Hemianopia in Untreated Secondary Syphilis.**—From the ophthalmic standpoint the case cited by Sichel and Fraser resolved itself into one of a right-sided homonymous hemianopia as the sole pathologic feature. The complete absence of systemic syphilitic manifestations is particularly striking.

**Wassermann Reaction in Diabetes.**—Rockwood and Sanford made serologic tests for syphilis in 501 cases of diabetes, 201 by the Noguchi method and 300 by the Kolmer technic. There were eight cases of coincidental syphilis and diabetes, three which may have been latent syphilis or false positives, and two of probable false positive reactions. There is, apparently, only a coincidental connection between syphilis and diabetes in this series of cases. This study leads the authors to conclude that the Wassermann reaction is rarely falsely positive in diabetes.

## Annals of Surgery, Philadelphia

**78:** 561-692 (Nov.) 1923

*Pneumoventricle of Cerebrum Following Fracture of Skull. F. R. Teachenor, Kansas Cty, Mo.—p. 561.
Postoperative Infective Parotiditis. W. H. Fisher, Toledo, Ohio.—p. 568.
Importance in Surgery of Thyroid in Correct Differential Diagnosis of Thyroid Diseases. W. M. Boothby, Rochester, Minn.—p. 572.
*Primary Sarcoma of Esophagus. C. E. Smith and G. Y. Rusk, San Francisco.—p. 577.
*Treatment of Hour-Glass Stomach by Double Gastro-Enterostomy. C. L. Gibson, New York.—p. 587.
Hypercholesterolemia. Case Treated by Bile Drainage. A. O. Wilensky, New York.—p. 594.
Meltzer-Lyons Test in Diagnosis of Gallbladder Disease. B. F. Scaiefe, New York.—p. 604.
*Chronic Cholecystitis Without Stone. F. W. Bancroft, New York.—p. 608.
Drainage of Common Bile Duct. M. R. Reid, Cincinnati.—p. 620.
*Calcareous Changes of Gallbladder Wall. W. F. Fowler, Rochester.—p. 623.
*Aneurysm of Renal Artery. M. J. Conroy, Boston.—p. 628.
Technic of Renal and Ureteral Surgery. J. H. Gibbon, Philadelphia.—p. 641.
*Conservative Treatment of Carbuncles. R. W. Lewis, New York.—p. 649.
Diaphragmatic Hernia. R. J. E. Oden, Chicago.—p. 660.

**Pneumoventricle of Cerebrum Following Skull Fracture.**—Teachenor's patient, while in a drunken state, fell and struck his head on the sidewalk. Roentgenograms of the skull showed a linear fracture beginning in the posterior superior part of the right parietal bone, extending downward and forward through the external auditory meatus. The lateral cerebral ventricles were distended and filled with air, and an area of slightly diminished density in the right middle cranial fossa was probably due to air. The left lateral ventricle was widely distended; not so the right. Roentgenograms taken eighteen days after the injury showed practically a complete absence of air in the ventricles. On the third day a partial facial palsy developed, peripheral in type. There was partial paralysis of the right seventh cranial nerve, and complete paralysis of the auditory portion of the eighth nerve.

**Primary Sarcoma of Esophagus.**—Smith and Rusk report a case of polypoid, spindle-cell fibrosarcoma of the lower end of the esophagus occurring in a man, aged 30. The man died suddenly following a convulsive seizure which began with twitching of the face and then extended over the entire body. The anatomic diagnosis was primary polypoid sarcoma of the esophagus; disseminated foci of pneumonia (possibly embolic) in the lower lobes of both lungs; multiple brain abscesses with purulent meningitis; thrombosis of the superior sagittal sinus; healed gastrostomy.

**Double Gastro-Enterostomy for Hour-Glass Stomach.**—The constriction between the two pouches in Gibson's case was due to cicatrization of a large ulcer which formed a tumor nearly the size of a hand. The pylorus was obstructed by a similar large callous, apparently cicatrized, ulcer. A double posterior gastro-enterostomy was done, one in the cardiac pouch without clamps, using five rows of sutures, three posteriorly and two anteriorly, using silk for the first and last and fine chromic gut for the other three. The same loop of intestine was used 5 inches away for a second gastro-enterostomy in the middle of the pyloric pouch. Six years after the operation the patient was in excellent health and free from gastric symptoms.

**Chronic Cholecystitis Without Stone.**—Bancroft believes that one is justified in making a diagnosis of chronic cholecystitis when there is a history of long-standing pain in the right upper quadrant which frequently radiates to the back. This pain is usually not as severe as the colic of cystic duct obstruction. Physical examination usually reveals tenderness on pressure over the region of the gallbladder. The Lyons test has proved a distinct aid in the nine cases in which Bancroft used it, as the diagnosis was made in 100 per cent. Cholecystectomy has produced good results in 88.5 per cent., while cholecystostomy, in the smaller series in which it has been performed, has not given good results; only 50 per cent. of the patients were cured.

**Calcareous Gallbladder Wall.**—Fowler relates the case of a woman who manifested the syndrome of cholecystitis during three years. The roentgen-ray examination disclosed a dense shadow due, apparently, to a sizeable gallstone. At operation and afterward the gallbladder looked and felt as though it contained a large calculus. However, incision of the organ and microscopic examination revealed generalized lime deposits within the gallbladder wall.

**Aneurysm of Renal Artery.**—The case of renal aneurysm reported by Conroy, the thirty-second to be reported, falls into the spontaneous group. The aneurysm gave rise to no symptoms during life. The patient died thirty-four months after removal of a breast for carcinoma. She gradually lost somewhat in weight, and developed sharp pains in the right shoulder and arm, these being set down to metastatic deposits in the cervical region of the cord. The patient continued to lose weight and toward the end had to be catheterized. The necropsy disclosed metastatic carcinoma in the eighth and ninth dorsal vertebrae, the adjoining ribs and the right humerus; generalized arteriosclerosis, involving chiefly the coronary, splenic and renal arteries; chronic interstitial nephritis; hypertrophy of the left ventricle; keratinizing adenocarcinoma of the uterus; adenoma of the kidney; and a saccular aneurysm of the inferior branch of the right renal artery.

**Roentgenotherapy for Carbuncles.**—Sixteen unselected cases of carbuncles treated by roentgen-ray irradiation are reported by Lewis. Only two of these sixteen cases required operative treatment. Sloughing and suppuration, and the skin sinuses through which this took place, were surprisingly small in the small and moderate sized carbuncles. The very large carbuncles resolved into enormous, sharply demarcated abscesses, which drained satisfactorily through sinuses formed by sloughing of the overlying skin. Pain was relieved following the roentgen-ray treatment in the majority of the cases, but this did not occur invariably. The duration of the small and moderate sized carbuncles seemed much shorter with roentgen-ray therapy then under operative treatment. The duration of the very large carbuncles seemed about the same with roentgen-ray or operative treatment. Cosmetic results of roentgen-ray treatment were far superior to those of operation.

## Archives of Neurology and Psychiatry, Chicago

**10:** 381-490 (Oct.) 1923

Neurologic Surgeons: With Report of One Case. H. Cushing, Boston.—p. 381.
Studies in Decerebration. I. Method of Decerebration. L. J. Pollack and L. E. Davis, Chicago.—p. 391.
*Pupillary Reactions in Epidemic Encephalitis. H. G. Mehrtens and O. Barkan, San Francisco.—p. 399.

*Fulminating Encephalomyelitis. H. E. Meleney, Peking, China.—p. 411.
*Spinal Subarachnoid Block. Its Significance as Diagnostic Sign. J. B. Ayer, Boston.—p. 420.
Dr. George M. Beard. C. L. Dana, New York.—p. 427.
Folie a Trois. F. J. Gerty and G. W. Hall, Chicago.—p. 436.
Pathology of Motor Paralysis by Lead. G. H. Hyslop and W. M. Kraus, New York.—p. 446.

**Pupillary Reactions in Epidemic Encephalitis.**—No Argyll Robertson pupils were found by Mehrtens and Barkan in thirty-six selected cases of epidemic encephalitis. A sluggish light reaction was always part of an ophthalmoplegia interna. Isolated paresis of accommodation, in which the pupillary reaction was normal, was also a frequent sign. The pupil in encephalitis is often mydriatic and is round or ovoid, in marked contrast to the serrated irregularity of the syphilitic pupil. As the result of their investigations the authors define an Argyll Robertson pupil as one in which the light reaction is reduced or absent in the presence of a normal convergence-accommodation reaction, in agreement with the definition of Argyll Robertson himself, but the accommodative power (ciliary muscle) must be intact. Unless this be done, an ophthalmoplegia interna may be diagnosed erroneously as an Argyll Robertson sign.

**Fulminating Encephalomyelitis.**—Two cases of fulminating encephalomyelitis are reported by Meleney from Peking, both of which resembled, clinically and microscopically, those occurring in the epidemic of so-called "Australian X-Disease" of 1917 and 1918. The patients each survived only three days after the onset of the acute symptoms, and died on consecutive days. There was no known contact between them. Microscopically the lesions consisted of focal accumulations of mononuclear and a few polymorphonuclear leukocytes, neuronophagia, perivascular and diffuse infiltration with lymphocytes, and nerve cell degeneration. The whole brain stem and spinal cord were involved in both cases, and in one case the cerebral cortex was involved as well.

**Spinal Subarachnoid Block.**—An analysis of fifty-three cases is reported by Ayer. In these cases it was possible to demonstrate an interruption in the free interchange of fluid in the spinal subarachnoid space. In twelve cases the block appeared incomplete. It is suggested that in every diagnostic lumbar puncture the aqueous manometer should be used, and dynamic studies carried out (especially the effect of jugular compression) as part of the routine examination of the spinal fluid. When block is partial or doubtful, combined punctures, as more delicate and certain in their interpretation than lumbar puncture alone, are indicated.

## Boston Medical and Surgical Journal

**189:** 907-964 (Dec. 6) 1923

Retroperitoneal Perirenal Lipoma. Report of Case. P. P. Johnson, Beverly, Mass.—p. 907.
Compound Craniocerebral Injuries. S. C. Harvey, New Haven, Conn.—p. 911.
*Analysis of Four Hundred Cases of Extra-Uterine Pregnancy. N. R. Mason, Boston, and R. W. Storrs, Hartford, Conn.—p. 914.
Rare Malignant Tumor of Radius. H. Q. Gallupe, Waltham, Mass.—p. 919.
*Roentgen-Ray Treatment of Eczema. W. J. MacDonald, Boston.—p. 926.
Prendergast Preventorium. J. B. Hawes, Boston.—p. 928.

**Extra-Uterine Pregnancy.**—All phases of this condition are presented by Mason and Storrs. The points stressed are: (1) the probability of a low grade intra-abdominal inflammatory condition with resulting adhesions playing a large part as the causative factor in most cases; (2) the fact that immediate operation without regard to the condition of the patient offers the best chance in cases of acute rupture and that operation should be done in all cases as soon as feasible after the diagnosis is made; (3) the inadvisability of abdominal drainage, except in old cases thought to be infected or in cases of oozing which could not be controlled in the usual manner, and (4) the advantage of the abdominal over the vaginal route of operation, especially as regards the control of hemorrhage.

**Roentgenotherapy for Eczema.**—MacDonald says that acute eczema will clear up under suitable local treatment, diet and rest, but if it is possible to do so, the local treatment should be supplemented by roentgen-ray treatment. Roentgenotherapy is the best method of treating chronic eczema.

## Florida Medical Association Journal, St. Augustine and Jacksonville

**10:** 125-154 (Nov.) 1923

Why We Should Demand Poison Labels on Concentrated Lye and Washing Powder Packages. R. C. Lynch, New Orleans.—p. 125.
Lye Legislation in Florida. H. M. Taylor, Jacksonville.—p. 126.
Esophageal Stenosis from Caustic Lye, As Seen by Roentgenologist. W. MeL. Shaw, Jacksonville.—p. 131.
Treatment of Diabetes with Aid of Insulin. J. E. Paullin and H. M. Bowcock, Atlanta, Ga.—p. 136.
Neuralgias of Trigeminal Nerve. E. H. Clarkson, Jacksonville.—p. 141.

## Iowa State Medical Society Journal, Des Moines

**13:** 491-530 (Dec. 15) 1923

What Iowa is Doing. R. H. Parker, Des Moines.—p. 491.
Mastoiditis in Infants. W. H. Johnston, Muscatine.—p. 493.
Differential Diagnosis Between Infection of Bone and Sarcoma of Bone. H. L. Beye, Iowa City.—p. 495.
Treatment of Placenta Praevia. G. A. Plummer, Cresco.—p. 499.
Acute Suppurative Otitis Media in Infants. C. C. Jones, Des Moines.—p. 500.
Treatment and Results in Fractures. J. M. Dodd, Ashland, Wis.—p. 506.
Contraindications to Herniotomy. E. Andrews, Chicago.—p. 508.
Hemorrhagic Disease of New-Born. F. C. Rodda, Minneapolis.—p. 511.
Cesarean Section. J. H. Bloomfield, Chicago.—p. 514.
Goiter Problem. J. W. Shuman, Sioux City.—p. 517

## Journal of Bacteriology, Baltimore

**8:** 521-596 (Nov.) 1923

Physiologic Study of Azotobacter Chroococcum, Beijerinckii and Vinelandii Types. U. Yamagata and A. Itano, Amherst, Mass.—p. 521.
*Antigenic Relationships of Bacterium Typhosum. I. Agglutination. E. S. Robinson, New Haven, Conn.—p. 533.
Relation of Digestive Enzymes and Ferments to Phenomenon of d'Herelle. E. B. McKinley, Dallas, Tex.—p. 543.
Apparatus for Tubing Semisolid Mediums. S. C. Spencer, Omaha.—p. 551.
*Attenuation of Bacteria Due to Temperature Shock. P. W. Allen, Urbana, Ill.—p. 555.
Mechanical Behavior of Dyes, Especially Gentian Violet, in Bacteriologic Mediums. E. W. Stearn and A. E. Stearn, Columbia, Mo.—p. 567.
Simple Micropipet Holder. H. W. Johnson, Ames, Iowa.—p. 573.
Test for Indol Based on Oxalic Acid Reaction of Gnezda. W. L. Holman and F. L. Gonzales, Stanford, Calif.—p. 577.
Growth of Yeast on Synthetic Agar Media. E. I. Fulmer and M. Grimes, Ames, Iowa.—p. 585.

**Antigenic Relationships of Typhoid Bacillus.**—Agglutination tests of a number of typhoid strains were made by Robinson. They show that such strains present considerable antigenic differences in so far as such tests furnish valid evidence. These differences are not sufficiently clear-cut and definite to permit the designation of types or groups; particularly since the descendants of a single culture may show similar variations. The failure of a strain to be agglutinated by an antityphoid serum is not proof of the nontyphoid nature of the strain; nor is failure of a serum to agglutinate a strain of typhoid bacilli proof of a lack of typhoid agglutinin in the serum.

**Attenuation of Bacteria by Pasteurization.**—The lengthening of the period between production and souring of pasteurized market milk, Allen says, is not entirely due to the reduction in numbers of bacteria, but is to some extent due to attenuation of bacteria during pasteurization. In pasteurized milk some species of bacteria are killed outright, some are attenuated, and some are stimulated, depending on the resistance of the organism to heat. Those organisms which have a thermal death point a little above the temperature and time of pasteurization are attenuated markedly, while those which have a thermal death point far above the pasteurization time and temperature are attenuated very little or are stimulated to more rapid growth at least for a period.

## Journal of Biological Chemistry, Baltimore

**58:** 1-361 (Nov.) 1923

*Preservation of Blood for Chemical Analysis. F. V. Sander, Mendota, Wis.—p. 1.
*Protein Matter of Bile. J. F. Logan, Montreal.—p. 17.
Nutritional Requirements of Baby Chicks. III. Relation of Light to Growth of Chicken. E. B. Hart, H. Steenbock and S. Lepkovsky, Madison, Wis.—p. 33.
Dietary Factors Influencing Calcium Assimilation. IV. Comparative Efficiency of Mixed Green Grasses and This Same Mixture Plus Steamed Bone Meal in Maintaining Calcium and Phosphorus Equilibrium in Milking Cows. E. B. Hart, H. Steenbock and C. A. Hoppert, Madison, Wis.—p. 43.

*Fat Soluble Vitamins. XIV. Inorganic Phosphorus and Calcium of Blood Used As Criteria in Demonstration of Existence of Specific Antirachitic Vitamin. H. Steenbock, E. B. Hart, J. H. Jones and A. Black, Madison, Wis.—p. 59.
*Id. XV. Calcium and Phosphorus Relations to Growth and Composition of Blood and Bone with Varying Vitamin Intake. R. M. Bethke, H. Steenbock and M. T. Nelson, Madison, Wis.—p. 71.
Metabolism of l-Pyrroildone Carboxylic Acid. Its Stability to Acids and Alkalies. R. M. Bethke and H. Steenbock, Madison, Wis.—p. 105.
Proteins of Wheat Bran. I. Isolation and Elementary Analyses of Globulin, Albumin and Prolamine. D. B. Jones and C. E. F. Gersdorff, Washington, D. C.—p. 117.
*Metabolism of Inorganic Salts. IV. Content of Inorganic Salts in Blood in Pregnancy; Especially Calcium. F. P. Underhill and A. Dimick, New Haven, Conn.—p. 133.
Id. V. Inorganic Salt Metabolism in Cocain Poisoning. F. P. Underhill and E. G. Gross, New Haven, Conn.—p. 141.
Influence of Hydrazine on Blood Concentration and Blood Sugar Content. F. P. Underhill and S. Karelitz, Jr., New Haven, Conn.—p. 147.
*Carbohydrate Metabolism. XXI. Relation of Sugar Excretion to Renal Integrity. F. P. Underhill and G. Wilens, New Haven, Conn.—p. 153.
Glucokinin. Apparent Synthesis in Normal Animal of Hypoglycemia Producing Principle. Animal Passage of Principle. J. B. Collip, Edmonton, Canada.—p. 163.
Basic Substances from Juice of Alfalfa Plant. C. S. Leavenworth, A. J. Wakeman and T. B. Osborne, New Haven, Conn.—p. 209.
Comparative Metabolism of Certain Aromatic Acids. V. Fate of Some Ring Substitution Products of Phenylacetic Acid in Organisms of Dog, Rabbit and Man. L. R. Cerecedo and C. P. Sherwin, New York.—p. 215.
Oxidation of Glucose by Iodin in Presence of Insulin. G. A. Alles and H. M. Winegarden, Pasadena, Calif.—p. 225.
Acid-Base Metabolism. I. Determination of Base Balance. A. T. Shohl and A. Sato, Baltimore.—p. 235.
Id. II. Mineral Metabolism. A. T. Shohl and A. Sato, Baltimore.—p. 257.
Urinary Excretion of Organic Acid and Its Variation with Diet. L. McLaughlin and K. Blunt, Chicago.—p. 267.
*Creatinin Excretion of Women. L. McLaughlin and K. Blunt, Chicago.—p. 285.
Uniformity in Invertase Action. J. M. Nelson and F. Hollander, New York.—p. 291.
Collodion Membranes of High Permeability. J. M. Nelson and D. P. Morgan, Jr., New York.—p. 305.
Aqueous Extracts of Pancreas. II. Physical and Chemical Behavior of Insulin. H. A. Piper, R. S. Allen and J. R. Murlin, Rochester, N. Y.—p. 321.
Id. III. Precipitation Reactions of Insulin. C. P. Kimball and J. R. Murlin, Rochester, N. Y.—p. 337.
*Qualitative Tests for Acetone Bodies. E. J. Bigwood and W. S. Ladd, New York.—p. 347.

**Preserving Blood for Chemical Analysis.**—A mixture of 0.01 gm. of sodium fluorid and 0.001 gm. of thymol for each cubic centimeter of blood is recommended by Sander for the preservation of blood for from six to fourteen days.

**Protein Matter of Bile.**—Evidence has been gathered by Logan which tends to show that the protein of ox bile is a mixture of a comparatively large proportion of glucoprotein with a small amount of nucleoprotein.

**Fat Soluble Vitamins.**—By the administration of cod liver oil freed from vitamin A by aeration, Steenboch et al. were able to restore the inorganic phosphate and calcium of the blood to normal, and the ash content of the bones was increased. These facts are taken as additional justification for the propriety of speaking of the fat-soluble vitamins rather than a fat-soluble vitamin, as it lends support to the idea that the antirachitic vitamin is an entity distinct from vitamin A.

**Relation of Diet to Bone Growth.**—On a synthetic ration of purified food constituents deficient in fat-soluble vitamins poor calcification of bone occurred in rats even with the addition of 15 c.c. of skimmed milk or 0.5 c.c. of whole milk per rat per day. Twenty cubic centimeters of skimmed milk, or 1 c.c. of whole milk, on the other hand, allowed normal calcification.

**Inorganic Salts in Blood in Pregnancy.**—Estimated on whole blood, Underhill and Dimick found that average figures for calcium content of pregnant women are somewhat higher than those obtained from women not pregnant. With the course of pregnancy little change can be demonstrated in the calcium of the blood. This fact fails to support the hypothesis of Bell and Hick that increased calcium of the blood at term may be of direct significance in the induction of labor. In general, the inorganic constituents of the blood undergo little change during pregnancy.

**Relation of Sugar Excretion to Renal Integrity.**—Underhill and Wilens assert that in experimental tartrate nephritis the renal threshold to glucose is altered, irregularly favoring the blood or the urine. The administration of glucose to nephritic animals is followed by still higher levels of blood sugar content.

**Creatinin Excretion of Women.**—The range for the creatinin coefficients of the normal women subjects was found by McLaughlin and Blunt to be well within the range found by Shaffer for men. Little difference was shown between the average day and the average night excretion of creatinin. The creatinin excretion of underweight women is greater than that of normal women. Creatin was found to be an almost constant component of the day urine of one healthy woman.

**Qualitative Test for Acetone.**—A solution of pure acetone gives a color reaction with sodium nitroprussid. A solution of diacetic acid, as free as possible from acetone, also gives a color reaction with sodium nitroprussid. Such a solution of diacetic acid gives a color reaction with ferric chlorid; acetone alone does not. Electrolytes present in urine, especially sodium chlorid, tend to intensify the color of the ring in the sodium nitroprussid test. Quantitatively, because of the many interfering substances, the tests as routinely done serve as only crudest approximations in indicating the amounts of acetone and diacetic acid present. The ferric chlorid test appears to give results somewhat less eccentric than the nitroprussid test.

## Journal of Immunology, Baltimore

**8:** 425-515 (Nov.) 1923

*Dangerous "Universal Donor" Detected by Direct Matching of Bloods. P. Levine and J. Mabee, New York.—p. 425.
Environmental Conditions Influencing Complement Fixation. J. W. McMeans, Pittsburgh.—p. 433.
Inhibition Zone in Precipitin Reactions with Soluble Specific Substance of Pneumococcus. H. J. Morgan, New York.—p. 449.
Anaphylactogenic Properties of Rye Pollen (Secale Cereale). M. E. Alexander, Waterbury, Conn.—p. 457.
*Human Hypersensitiveness to Different Proteins of Horse Serum. S. B. Hooker, Boston.—p. 469.
*Hitherto Undescribed Pair of Iso-Agglutination Elements in Human Beings. A. F. Coca and H. Klein, New York.—p. 477.
Occurrence of Blood Groups Among American Indians. A. F. Coca and O. Diebert, New York.—p. 487.
Agglutinins for Bacterium Pullorum in Hen's Eggs. F. R. Beaudette.—p. 493.
Production of Monovalent Botulinus Antitoxic Serum Types A and B. M. W. Wheeler, Albany.—p. 501.

**Matching of Bloods.**—Levine and Mabee recommend that in performing the direct matching of Coca the donor's citrated blood be diluted with saline solution 2:10 instead of 1:10 before being mixed with the equal volume of recipient's citrated blood.

**Triple Reaction Due to Specific Hypersensitiveness.**—A triple reaction to horse serum has been shown by Hooker to be due to specific hypersensitiveness, to serum albumin, euglobulin and pseudoglobulin. Thereby the evidence that these proteins are severally and specifically concerned with the manifestations of recurrent serum sickness is strengthened.

**New Iso-Agglutination Elements.**—A new pair of iso-agglutination elements is described by Coca and Klein which occur in a high percentage of all the four blood groups. The agglutinin X was found in about 75 per cent. of Group I serums, and about 60 per cent. of Group III serums. The agglutinable X was found in about 75 per cent. of Group II corpuscles and in both of the two Group IV individuals examined. The X pair of iso-agglutination element seem not to be inherited as mendelian allelomorphs.

## Journal of Infectious Diseases, Chicago

**33:** 477-581 (Dec.) 1923

*Effect of Benzyl Benzoate on Antibody Formation in Rabbit. L. A. Emge, San Francisco.—p. 478.
Inhibition of Putrefactive Spore Bearing Anaerobes by Bacterium Acidophilus. J. C. Torrey and M. C. Kahn, New York.—p. 482.
*Production of Typhoid Agglutinins in Successive Generations of Rabbits. M. F. Guyer and E. A. Smith, Madison, Wis.—p. 498.
Comparative Resistance of Bacteria from Native Habitats and From Artificial Cultures. E. G. Hastings, Madison, Wis.—p. 526.
*Changes in Streptococcus from Encephalitis, Induced Experimentally. Significance in Pathogenesis of Epidemic Encephalitis and Influenza. E. C. Rosenow, Rochester, Minn.—p. 531.
Can All Strains of Specific Organism Be Recognized by Agglutination? J. W. Stevens, Madison, Wis.—p. 557.
Bacilli of Paratyphosus B Group. Differentiation of Paratyphoid-Enteritidis Group. VII. E. O. Jordan, Chicago.—p. 567.

**Effect of Benzyl Benzoate on Antibody Formation.**—Emge's observations indicate that in rabbits the subcutaneous administration of benzyl benzoate exerts a mildly depressing influence on the production of hemolytic amboceptor.

**Production of Typhoid Agglutinins.**—In subjecting successive generations of rabbits to typhoid inoculations it was found that considerably higher agglutination titers could be developed in individuals of strains which had been under immunization for three or four generations than in first generation animals of untreated stock.

**Changes in Streptococcus from Encephalitis.**—According to the results of Rosenow's experiments, the same streptococcus may give rise to widely different diseases, depending on whether it be in the virulent or pneumotropic phase, when influenza would result, or in the less virulent but neutropic phase, when polio-encephalitis and allied conditions would be prone to develop. Clinical studies indicate strongly that this is so. Rosenow suggests the possibility that members of this group of organisms which are normally present in the upper respiratory tract of humans, acquire under certain conditions certain other phases in their life cycle which would explain the occurrence of sporadic cases and the origin of epidemics in isolated regions.

## Laryngoscope, St. Louis

**33:** 811-890 (Nov.) 1923


Indications for Surgical Intervention in Acute Suppuration of Middle Ear. P. D. Kerrison, New York.—p. 811.
Unusual Forms of Extension in Purulent Otitis Media. Involvement of Cranial Nerves. H. Friedenwald and M. L. Breitstein, Baltimore.—p. 820.
Indications for Mastoid Operations Under Local Anesthesia. P. S. Stout, Philadelphia.—p. 837.
Case of Macrotia, Occlusion of Left External Auditory Canal; Operated with Satisfactory Results. W. G. Shemley, Philadelphia.—p. 841.
New Instruments for Puncturing and Visualizing Maxillary Antrum of Highmore. W. Spielberg, New York.—p. 844.
Immediate and Late Treatment of Nasal Fractures. L. Cohen, Baltimore.—p. 847.
Foreign Body (Gauze) Granuloma of Nose. S. J. Pearlman and I. Pilot, Chicago.—p. 854.
Affections of Neck Encountered in Diseases of Upper Air Passages. E. F. Cyriax, London.—p. 857.
Improved Septal Punch Forceps. J. D. Lewis, Minneapolis.—p. 862.
Cartilage and Bone in Tonsil. P. Hillkowitz and H. Gauss, Denver.—p. 865.
Sporotrichosis of Nose. G. C. Albright, Iowa City, Iowa.—p. 875.
Progressive Edema of Larynx; Specific. H. Smith, New York.—p. 881.
Radium in Treatment of Malignant Tumors of Nose and Throat. J. R. Ranson, Denver.—p. 883.
Death from Cocain Poisoning. A. M. Alden, St. Louis.—p. 889.
Hemostat for Tonsil Hemorrhage. W. Herbert, Brooklyn.—p. 888.


## New Jersey Medical Society Journal, Orange

**20:** 377-414 (Nov.) 1923


Obstetrics. J. M. Hackett, Leonia.—p. 377.
Lumbosacral Backache. B. F. Buzby, Camden.—p. 384.
Computation of Percentage of Permanent Disability in Eye Injuries, Under Employers' Liability Act. E. S. Sherman, Newark.—p. 389.


## New Orleans Medical and Surgical Journal

**76:** 215-259 (Nov.) 1923


Cicatrical Stenosis of Esophagus Following Swallowing of Caustic Acid. W. B. White, Shreveport.—p. 221.
Arthroplasty. H. B. Gessner, New Orleans.—p. 224.
Cardiovascular Conditions. H. P. Jones, New Orleans.—p. 227.
Abruptio Placenta. Report of Case of Traumatic Origin.—H. E. Bernadas, New Orleans.—p. 233.
Congenital Arthritis with Ankylosis of Various Joints. P. A. McIlhenny, New Orleans.—p. 238.
Epistaxis. W. M. Johnson, New Orleans.—p. 240.
Intestinal Infection with Endameba Dysenteriae as Factor in Arthritis Deformans. S. K. Simon, New Orleans.—p. 243.
Etiology of Pellagra. B. W. Page, Maysville, N. C.—p. 245.
Focal Infection a Cause of Erythema Multiforme. R. A. Oriol, New Orleans.—p. 247.


## New York Medical Journal and Medical Record

**118:** 661-724 (Dec. 5) 1923


Touching For King's Evil. W. R. Riddell, Toronto.—p. 661.
*Lipodystrophia Progressiva Superior; Two Cases. L. N. Boston, Philadelphia.—p. 668.
Erythema Nodosum Associated with Streptococcic Faucitis. W. R. Stone, New York.—p. 673.
Epithelioma of Back of Hand. D. W. Montgomery and G. D. Culver, San Francisco.—p. 674.
Plastic Surgery of Face and Neck. J. E. Sheehan, New York.—p. 676.
Skin Diseases and Metabolic Disorders. O. L. Levin, New York.—p. 678.
Grading of Epithelioma and Its Radiation Sensibility. R. Duncan and E. D. Ward, Los Angeles.—p. 681.
Hypertrichosis Treatment by Electrolysis. L. K. McCafferty, New York.—p. 685.
Pruritus with Lichenification. F. Wise, New York.—p. 688.


**Lipodystrophia Progressiva Superior with Ovarian Dysfunction.**—The two patients furnishing the basis for Boston's report have both shown considerable improvement as the result of treatment. Menstrual abnormalities were present in both cases. It was impossible to connect these cases with abnormal functions of the endocrine glands. There was present, however, some ovarian dysfunction in each case. Abnormality of the skin, including fat atrophy, softness of the skin, and roughness of the skin, as well as hypertrichosis, were important factors in the diagnosis. A microscopic study of sections of the skin taken from the affected areas revealed positive diagnostic evidences. Brief notes on typical cases furnished by the literature are appended.

## Ohio State Medical Journal, Columbus

769-840 (Nov.) 1923


Slit Lamp Microscopy of Living Eye. Its Aid to Histologic Research and as Refinement in Ophthalmic Diagnosis. R. Von der Heydt, Chicago.—p. 773.
Medical Treatment of Glaucoma. C. S. Means, Columbus.—p. 776.
End Results Following Removal of Calculi from Kidney and Ureter. E. O. Smith, Cincinnati.—p. 777.
*Intraperitoneal Transfusion in Infants. H. O. Ruh and J. E. McClelland, Cleveland.—p. 780.
Syphilitic Disease of Nervous System. E. M. Baehr, Cincinnati.—p. 785.
Industrial Medical Practice and Its Relation to General Practice. A. G. Cranch, Cleveland.—p. 788.
Uses and Limitations of Roentgen Ray. H. J. Means, Columbus.—p. 792.


**Intraperitoneal Transfusion in Infants.**—Ruh and McClelland have repeated most of the experiments of early investigators, using guinea-pigs and dogs, and have been able to confirm their results. They have found that blood of the same species, which they refer to as "autologous blood," is very rapidly absorbed from the peritoneal cavity. This is true whether the blood is given whole, defibrinated or citrated. By dissecting out the thoracic duct in dogs they were able to show that absorption takes place largely through this channel and also that it appears in the thoracic lymph microscopically in eight and one-half minutes, and macroscopically in ten minutes, so that the lymph runs pink or rose red instead of the normal white in dogs which had been fed recently. This confirms the work of Hayem and Peet and Sweet. They injected chicken blood (heterologous blood) into the peritoneal cavity of a dog and after twelve minutes were able to demonstrate nucleated red cells in the lymph escaping from the incision in the thoracic duct. In order to determine, if possible, the difference in absorption of defibrinated, citrated or whole blood, three series of guinea-pigs were injected intraperitoneally with the three different bloods. The first series received whole, the second series defibrinated, and the third series citrated blood. Whole citrated or defibrinated blood is rapidly absorbed from the peritoneal cavity. Much of this absorption takes place through the lymphatics which drain into the thoracic duct. There is a marked difference in the rate of absorption between whole, citrated and defibrinated bloods. The injection of whole blood, which is the most simple, gives no more reaction than modified blood and is, therefore, to be preferred. The clinical application of intraperitoneal transfusion of whole blood has yielded encouraging results in the few cases in which the authors had the opportunity to use it. They believe that this form of transfusion could be made a valuable clinical procedure in selected cases of sick infants, not only in cases of hemorrhagic disease of the new-born, but also in many other conditions: for example, anemias, prematurity, athrepsia, alimentary intoxication (acidosis) or any exhausting disease which has made an extraordinary drain on the infantile tissues.

## Rhode Island Medical Journal, Providence

**6:** 179-194 (Dec.) 1923


Endometrial Pathology. A. Sturmdorff, New York.—p. 179.
Use and Abuse of Pituitary Extract in Obstetrics. B. H. Buxton, Providence.—p. 183.
Moonshine Asphyxia. L. L. Albert, Central Falls.—p. 187.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Archives of Radiology and Electrotherapy, London

No. 280: 161-192 (Nov.) 1923

Cranial Radiography. Radiography of Sella Turcica. R. Knox.—p. 161.
Photographic Desensitizing Agent in Radiography. A. B. MacLean.—p. 184.
Elevation of Diaphragm and Unilateral Phrenic Paralysis. C. Wright.—p. 187.

### British Medical Journal, London

2: 1073-1126 (Dec. 8) 1923

*Minor Endocrine Disturbances. Their Metabolic and Psychical Effects. W. L. Brown.—p. 1073.
Hints from Old Physicians. J. A. Lindsay.—p. 1077.
*Diagnosis of Smallpox and Chickenpox. G. R. Painton.—p. 1080.
*Fifty Cases of Smallpox (1923). G. F. Rigden.—p. 1081.
Two Cases of Intra-Abdominal Hernia. E. R. Carling.—p. 1082.
Sequelae of Lethargic Encephalitis. E. F. Buzzard.—p. 1083.
*Prognosis of Psychoses Occurring During Adolescence. D. K. Henderson.—p. 1090.
*Treatment of Iritis with Tuberculin. E. R. Chambers.—p. 1096.
Record Plasmacytosis. R. Craik.—p. 1096.

**Organotherapy.**—Brown points out that it would be difficult to mention a drug which is clearly and beyond doubt of value in the treatment of disease and yet which possesses no known pharmacodynamic effects. Yet many of the extracts in common use have not been shown to have any such action. Even some of those which do cannot be used satisfactorily in substitution therapy. The early triumphs of thyroid medication tended to blind one to the difficulties surrounding the use of other glandular extracts in therapeutics. Yet the thyroid is exceptional in containing a definite reservoir of secretion and, by virtue of its duct originally opening into the alimentary canal, retaining the power of having its secretion absorbed by that route. It is perhaps fortunate that many of the preparations in use are inert, or otherwise damage might be done. Thus the injection of secretin by liberating an active pancreatic secretion may produce digestion of the intestine. It is just as well, therefore, that organotherapy lags behind endocrinology.

**Diagnosis of Smallpox and Chickenpox.**—Placing much reliance on the severity of the rash in making a differential diagnosis between chickenpox and smallpox Painton believes to be a fallacy. A typical chickenpox and a typical smallpox rash are easily distinguished, but a chickenpox rash may be severe and very pustular, and smallpox lesions may be of abortive type; even when not abortive they may be more superficial and less markedly round than usual and may have the appearance of successive crops on successive days. There is no dividing line to be plainly seen between smallpox sine eruption; mild smallpox, with one, two, ten, twenty, or a hundred lesions; severe, discrete confluent smallpox, and the hemorrhagic forms of this disease. The claim that there is a separate and distinct disease—alastrim—Painton says must be rejected. Rats inoculated with alastrim did not develop an eruption, but became almost completely immune to vaccine virus. When intracutaneous inoculation is made with smallpox crusts, alastrim material, and vaccine virus in rats in the manner used in the Schick test for diphtheria, a reaction occurs. Rats previously inoculated with vaccine virus gave an intracutaneous reaction to smallpox crusts, alastrim material, and vaccine virus, but remained negative to chickenpox crusts. In a recent Gloucester epidemic a case of chickenpox was admitted to hospital as one of smallpox. The patient on recovery was discharged from hospital, and a few days later passed through a typical prodromal stage and developed a typical and profuse smallpox rash. The converse has also happened, a smallpox patient on discharge from hospital developing a typical chickenpox eruption within a month of discharge.

**Value of Vaccination.**—In Rigden's review the protective value of recent vaccination is abundantly confirmed, while successful vaccination performed after the disease has appeared excludes smallpox. Successful vaccination during the incubation period has no diagnostic value.

**Prognosis of Psychoses Occurring During Adolescence.**—Cases are reported by Henderson which illustrate that the symptoms must always be considered in the light of the personality; other cases are reported which emphasize the importance of attempting to differentiate between what is constitutional and what is exogenous. A grave prognosis is indicated in those cases which have shown well marked constitutional abnormalities, but there are many cases which, irrespective of constitutional defects, have sufficiently developed their outside interests to enable them, under the best conditions, to readjust satisfactorily; the prognosis in cases which have developed on an exogenous basis is infinitely better. A complete recovery with good insight in case of the dementia praecox reaction type is comparatively infrequent, but a social, as opposed to a medical, recovery takes place more frequently than is generally recognized. The prognosis should not be based on symptoms, but should depend on the acuteness of the disorder, on its early recognition, on the individuality and intensiveness of the treatment, which in turn must be modified according to a study of the reactions of the personality.

**Treatment of Iritis with Tuberculin.**—In Chambers' case tuberculous infection of the cornea and iris had evidently existed for a considerable time without doing permanent damage. Local ophthalmic treatment had no effect on the disease. Tuberculin, unaided by any other treatment, produced a cure in a short time.

### Calcutta Medical Journal

18: 433-480 (Oct.) 1923

Importance of Symptoms in General Practice. A. Majumdar.—p. 433.
Postinfusion Reaction in Cholera. D. N. Banerjee.—p. 445.
Main Principles of Cardiologic Practice. S. C. Bose.—p. 453.
Case of Malignant Malaria. A. Chakraverti.—p. 457.

### Indian Medical Gazette, Calcutta

58: 505-556 (Nov.) 1923

*Gleanings from Records of Government Maternity Hospital, Madras. C. A. F. Hingston and A. L. Mudaliar.—p. 505.
*Pandemic of Influenza in India in 1918. E. S. Phipson.—p. 509.
Artificial Pneumothorax and Other Surgical Methods in Advanced Tuberculosis and Pleurisy. J. Gravesen.—p. 524.
*Cultural Examination of Urine in Kala-Azar. L. E. Napier and B. M. Das Gupta.—p. 530.
Psychopathic Child. O. A. R. B. Hill.—p. 532.

**Unusual Cases of Pregnancy from Madras Maternity Hospital.**—Hingston and Mudaliar report a number of interesting cases, such as an ovarian pregnancy of eight months' gestation; an ovarian pregnancy on the left side, with a ruptured tubal pregnancy on the right side; a tubal pregnancy showing erosion of the tube and fetus in sac presenting, but not ruptured; cases of extra-uterine gestation showing twins and triplets; a right tubal pregnancy, the hand and foot of the fetus being outside the placenta in the gestation sac; a ruptured extra-uterine gestation, primary tubal—which, after rupture, became interligamentous. Secondary rupture occurred. The authors state that in India the majority of cases of hemorrhage are not so severe as in Europe. This is explained by the fact that in cold climates there is a much greater congestion of blood in the pelvis and abdominal organs than in a hot climate.

**International Bureau of Public Health.**—Phipson proposes the organization of an International Bureau of Public Health, to keep in touch with influenza incidence and mortality throughout the world and to give timely warning to all governments of the development of an epidemic.

**Urine Cultures in Kala-Azar.**—Repeated examinations of the urine of kala-azar cases have convinced Napier and Das Gupta that, as a general rule, a viable form of the parasite is not present in the urine of these patients.

### Journal of Laryngology and Otology, Edinburgh

38: 621-700 (Dec.) 1923

Advancement of Laryngology and Otology. A. L. Turner.—p. 621.
Work of Sherrington on Physiology of Posture. F. M. R. Walshe.—p. 642.
Experimental Physiology of Labyrinth. A. de Kleijn.—p. 646.

## Journal of Obstetrics and Gynaecology of British Empire, Manchester

30: 329-506 (Autumn Number) 1923

Anatomic Condition of Wall of Uterus of Lesser Mammals at Term. H. Keiffer.—p. 331.
*Case of Suppression of Urine with Symmetrical Necrosis of Renal Cortex in Parturient Woman. J. N. Cruickshank.—p. 336.
Studies in Fetal Development. I. Weight of Organs. M. F. L. Keene and E. E. Hewer.—p. 345.
*Diurnal Incontinence of Urine in Women. V. Bonney.—p. 358.
*"The Previous Case." A. C. F. Halford.—p. 366.
*Menstruation and Pregnancy in Lymphadenoma (Hodgkin's Disease). A. A. Gemmell.—p. 373.
*Relative Merits of Operations on Round Ligaments for Retroversions of Uterus. Procedure for Increasing Scope and Usefulness of Alexander-Adams Operation. J. H. Ferguson.—p. 382.
Bacterial Infection of Urinary Tract Complicating Pregnancy and Puerperium. J. Hewitt.—p. 390.
Use and Abuse of Obstetric Forceps. C. Berkeley.—p. 413.
New Method of Performing Salpingostomy. A. Gray.—p. 430.
*Chorio-Angioma of Placenta. G. I. Strachan.—p. 433.
*Course of Pregnancy, Labor and Puerperium in Case of Chronic Purpura Hemorrhagica. G. Morgan.—p. 438.
*Decidual Reaction in Diffusion Endometriomyoma of Pregnant Uterus. C. D. Lochrane.—p. 443.
Clamp Forceps for Controlling Hemorrhage When Performing Myomectomy. V. Bonney.—p. 447.
New Vulval Retractor. C. Berkeley.—p. 450.

**Suppression of Urine with Necrosis of Renal Cortex.**—Cruickshank's patient was a X para, aged 33, who gave a history of kidney trouble which was first noted during her first pregnancy, thirteen years previously, and which had recurred at intervals thereafter. During the tenth pregnancy the patient appears to have been in fair health until the fifth month. Then she began to have headache, abdominal pain and vomiting, and later uterine bleeding began. There was no edema, but the urine was scanty. The pulse showed high tension. The patient was anesthetized, and a fetal foot brought down. The hemorrhage then ceased. The fetus was later delivered. After delivery of the fetus the uterus was noted to be filled with blood clot. The next day there was suppression of urine. The patient's general condition was worse, and vomiting was more severe and constant. The morning of the second day about 1 ounce of urine was passed. On the fourth day complete suppression of urine was present, with pain in the back and left side. No pulmonary signs were detected to account for this. This state of affairs continued for five days. Then the patient's breathing became labored, weakness increased, and death occurred. There had been complete suppression of urine for five days, and almost complete suppression for four days before that. A partial necropsy was done. The lungs were edematous and showed a moderate degree of hypostatic congestion. Liver, pancreas, suprarenals and spleen were virtually normal. Both kidneys were dark in color with considerable disturbance of the normal conformation of the renal tissue. Numerous areas of necrotic tissue were visible scattered throughout the cortex and between the pyramids of both kidneys, distorting the outline of the medullary tissue. The degree of damage was apparently almost equal in both kidneys, but its distribution in each was irregular. Cruickshank is of the opinion that the necrosis of the cortical parenchyma is a result of thrombosis of the finer arteries and arterioles, and that the thrombotic process commences in the distal parts of the vessels and spreads in a proximal direction for varying distances. The cause of the thrombosis appears to be complex, but the important factor in its etiology seems to be vascular spasm induced presumably by the action of a toxic substance or substances circulating in the blood of eclamptic women. Arteriosclerosis and endarteritis are commonly, though not constantly, predisposing causes.

**Diurnal Incontinence of Urine in Women.**—Bonney asserts that this condition is common in parous women over 40. It is readily remediable by medially incising the anterior vaginal wall from a little above the urethrovesical junction almost to the meatus and then reflecting flaps right and left of the incision. The urethral floor is thus exposed and a series of sutures are inserted "Lembert-wise" so as to overfold the tissues and thus strengthen and tauten the anterior end of the pubocervical muscle sheet, or a buttress may be formed of the vaginal flaps after the manner of Blair Bell's colporrhaphy. This improves the results of the operation markedly. There are occasional cases in which the operation fails. In several of these Bonney has obtained success by ventrifixing the bladder through a median abdominal incision, the bladder being pulled up and its anterior wall attached by silk sutures to the back of the rectus muscle for a couple of inches above the bone.

**The Previous Case.**—By the term "the previous case" Halford means a person with a septic focus of any kind. He directs his remarks particularly to cases of puerperal sepsis.

**Menstruation and Pregnancy in Lymphadenoma.**—The facts presented by Gemmell are based on a study of fifty-seven cases of lymphadenoma in the female. Forty-nine of these cases were collected from the literature. Thirty-nine occurred during the normal period of menstrual activity. In seventeen cases only was the menstrual history obtained and of these, fourteen patients showed varying degrees of oligomenorrhea even as far as complete amenorrhea in some cases. In the other three cases the menses do not appear to have been disturbed by the disease. Gemmell believes that the female is, in some measure, protected against this disease to a greater extent than the male. To explain this on an anatomic or physiologic basis one must look to the female sex organs and endocrine system as being the main points of difference between the sexes. The only organ which plays a part in both systems is the ovary. If there is a hypofunction of the ovary, oligomenorrhea will occur in varying degree, depending on the amount of ovarian involvement. As long as there is sufficient ovarian hormone in the general circulation the individual can resist the disease; should, however, this amount be reduced by any cause, Hodgkin's disease may occur, and once this has happened the function of the ovary is inhibited, both by the disease itself and by the anemia which is a part of it, although often only mild in degree. The obvious inference from this suggestion is that in addition to treatment on the present well recognized lines of arsenic and roentgen rays, ovarian extract should be given to the patients to prevent the spread of the disease and give the individual the opportunity of dealing with it.

**Round Ligament Operations for Retroversion of Uterus.**—Ferguson makes a Küstner incision extending down to the aponeurosis. A vertical incision through the aponeurosis between the abdominal recti and through the peritoneum opens the abdominal cavity. The external abdominal rings are then exposed and carefully defined, as in the method of doing the ordinary Alexander operation. The round ligaments are pulled out and shortened in the usual way. The operator can either sew up the peritoneum, recti muscles and aponeurosis before fixing the round ligaments in the inguinal canals, or preferably he can suture the round ligaments first, before finally closing the abdomen. By this method, through one comparatively small wound, all the undoubted advantages of the Alexander operation can be obtained in every case in which operative intervention for retroversion is required. Moreover, if by any chance the round ligaments get torn and their proximal ends retract and cannot be recovered in the inguinal canal, or in the rare cases in which they cannot be found, the uterus can be fixed up intraperitoneally.

**Chorio-Angioma of Placenta.**—Strachan's patient was a quadri para; her obstetric history was unimportant, all the previous children, as well as the present one, being born alive, normally at full time and progressing well. The last pregnancy was uneventful, and the placental abnormality was discovered only on careful examination of the organ after expulsion.

**Pregnancy with Chronic Purpura Hemorrhagica.** — In Morgan's case purpuric symptoms had been intermittently present for fourteen years. The pregnancy continued up to the thirty-seventh week, and resulted in the birth of a living child. There was no immediate postpartum hemorrhage. On the sixteenth day of the puerperium, blood casts of the uterus were passed and continued to be passed over a period of thirty-two days. There were clinical manifestations of the disease in the infant.

**Endometriomyoma of Pregnant Uterus.**—Only ten cases of so-called adenomyoma occurring with pregnancy have pre

viously been reported. Two of these were extrauterine adenomyomata and occurred in the rectovaginal septum in association with uterine pregnancy. In the case reported by Lochrane the septal tumor had no palpable connection with uterine tissue.

## Journal of State Medicine, London

**31:** 551-600 (Dec.) 1923

Health of Worker National Asset. T. Oliver.—p. 551.
Influence of Atmospheric Condition on Health of Industrial Worker. H. M. Vernon.—p. 561.
Present Position of Leprosy Prophylaxis. L. Rogers.—p. 569.
Necessity for Better Protection of Food by Municipal Authorities. C. E. Goddard.—p. 585.

## Medical Journal of Australia, Sydney

**2:** 456-482 (Nov. 3) 1923

Fulminating Case of Local Anthrax Infection: History of Disease in Australia. J. B. Cleland.—p. 455.
*Effects of Carbohydrate Deprivation on Pancreatic Function. A. R. Southwood.—p. 460.
*Stable Antigen for Hydatid Complement Fixation Test. S. W. Patterson and F. E. Williams.—p. 467.
*Unusual Case of Mastoid Disease. T. L. Anderson.—p. 467.
Pseudohypertrophic Paralysis. W. J. Hull.—p. 468.

**Effects of Carbohydrate Deprivation on Function of Pancreas.**—Experiments performed by Southwood are interpreted as showing that in addition to its effect in producing ketosis, carbohydrate deprivation temporarily diminishes the ability of the tissues to store glucose with rapidity. The delay in storage so induced is subject to individual variation. In some persons the delay may be sufficiently great to allow the sugar concentration in the blood to exceed the renal threshold for sugar and a transient glycosuria occurs. If at the time of breaking the carbohydrate fast an injection of insulin be given, the rise of sugar concentration is not so great and glycosuria is prevented.

**Stable Antigen for Hydatid Complement Fixation Test.**—Extracts of fresh fluid and cyst wall with saline solution, alcohol or ether were found by Patterson and Williams to have such low antigenic values as to be useless in the routine tests. Alcoholic extracts of the scolex contents of animal cysts were found to have considerable antigenic value, but unfortunately gave pseudopositive reactions with syphilitic serum. By evaporating off the alcohol at room temperature and taking up the residue in distilled water or 0.9 per cent. salt solution, they obtained an antigen of strong antigenic value, which gives no fixation of complement in the presence of syphilitic serum, and which keeps its properties apparently without diminution. Two antigens, one prepared fifteen months and the other twelve months ago, give strong complement fixation with hydatid serum and no fixation with serum from syphilitic patients.

**Mastoid Disease with Occipital Abscess.**—On opening up the mastoid antrum in his case, Anderson found an opening through the bone internal to the lateral sinus. The pus had travelled through the subdural space posteriorly toward the center of the occiput and had then perforated the occipital bone causing a subcutaneous abscess in that region.

## South African Medical Record, Cape Town

**21:** 509-528 (Nov. 24) 1923

Suppurative Salpingitis. D. H. Wessels.—p. 511.
Means of Dealing with Menace of Fresh Water Snails in Natal. F. G. Cawston.—p. 514.
Removal of Collar Stud from Left Bronchus. R. Stevenson.—p. 515.
In Days of van Reibeeck. O. M. Gericke.—p. 516.

## Tubercle, London

**5:** 57-104 (Nov.) 1923

*Elimination of Tubercle Bacillus by Kidneys in Pulmonary Tuberculosis. F. B. Hobbs.—p. 57.
*Adolescent and Other Forms of Tubercle. H. de C. Woodcock.—p. 64.
*Can Pleural Adhesions Be Diagnosed in Vivo? H. Deist.—p. 69.

**Elimination of Tubercle Bacillus by Kidneys.**—The incentive to Hobbs' study was a patient with renal tuberculosis, in whose urine, obtained from the left ureter, tubercle bacilli were found. The left kidney was ultimately removed and found to contain a caseous tuberculous nodule the size of a pea, situated at the upper pole. The patient was also suffering from tuberculous disease of the right shoulder and had suspicious signs in the lungs, but no tubercle bacilli were found in the sputum. Eleven months after the operation, the patient was well and there were no tubercle bacilli in the urine.

**Adolescent Tubercle.**—It has seemed to Woodcock that very frequently the adolescent patient with phthisis has inherited his characteristics from one parent only, the other parent, curiously enough, in many cases showing quite opposite physical traits. The patient has not only seemed to have inherited, but to have accentuated stigmata. This is not incompatible with the scientific theory of inheritance. The adolescent cases of tuberculosis described by Woodcock he asserts have no analog among children. The anatomic characteristics of these patients are described in detail. He feels that the problem of the occurrence of pulmonary tuberculosis will be settled by a closer examination of the mendelian theory of inheritance, as well as by the study of the effect of environment, including with this the results of functional overstrain.

**Diagnosis of Pleural Adhesions.**—Experiments undertaken to show how far the heart is concerned in cases of concretio pleurae, suggested to Deist the trial of graphic representation of pleuritic adhesions—which method seemed to be valuable, especially with respect to its practical bearing on the induction of an artificial pneumothorax. The method was almost exclusively tried with patients who were intended for pneumothorax treatment, so that it was possible, to a degree not often attainable, to evaluate diagnostic data by the success of the operation. If it was not, or but incompletely, possible to induce pneumothorax it was thus proved that there were adhesions. In order to obtain a graphic demonstration, Deist made use of the cardiosphygmograph of Jaquet. On the basis of an experience extending over several years he has persuaded himself that with this method adhesions are indubitably to be shown; and, moreover, that it is possible, as long as there is no concretion, to find by it free pleural space, and thus to render the induction of a pneumothorax (perhaps a partial one at first) feasible.

## Annales des Maladies Vénériennes, Paris

**18:** 737-816 (Oct.) 1923

Experiments on Chemotherapy of Spirillosis. M. Pomaret.—p. 737.
*Gummas at Sites of Injections. H. Gougerot.—p. 784.
Objective Identity of Five Chancres from Same Source. Delmas.—p. 788.

**Gummas at Sites of Injections.**—Gougerot describes a case in which ulcerating gummas developed around the three points where benzoate of mercury had been injected. The patient recovered after neo-arsphenamin. Another patient developed torpid abscesses after injections of morphin. The condition lasted for seven years. After the diagnosis was made, neo-arsphenamin was administered, and recovery was complete in fifteen days.

## Annales de Médecine, Paris

**14:** 257-348 (Oct.) 1923

"Gastric Leukopedesis." Loeper and G. Marchal.—p. 257.
*Respiratory Function in Tuberculosis. M. Piery and H. Boisseau.—p. 284.
Syphilitic Psychoses. II. R. Targowla.—p. 306.
Calcium in the Human Organism. M. P. Weil and Guillaumin.—p. 323.

**Respiratory Function in Pulmonary Tuberculosis.**—Piery and Boisseau found that during the evolution of pulmonary tuberculosis the respiratory and vital capacities are subject to a parallel progressive decrease, proportional to the intensity and gravity of the process. In diffuse fibrous tuberculosis with emphysema, while the respiratory capacity generally decreases, the vital capacity suffers only a slight decrease. In artificial pneumothorax, the respiratory capacity, after an unsettled period, increases progressively until the termination of the collapse of the lung. During that period the vital capacity decreases slowly, but returns after a year to approximately normal condition, while the respiratory capacity reaches its previous state in two or three months.

## Archives des Maladies de l'App. Digestif, Paris

**13:** 729-832 (Oct.) 1923

*Diuresis in Pylorostenosis. H. Surmont and J. Tiprez.—p. 729.
*Achlorhydria in Pernicious Anemia. A. Hurst.—p. 747.

*Treatment of Cholelithiasis. A. Théohari.—p. 762.
Normal and Pathologic Gastrograms. D. Daniélopolu and A. Carniol. —p. 775.
Diagnosis of Stenosis of the Pylorus. L. Timbal.—p. 787.

**Diuresis in Pylorostenosis.**—Surmont and Tiprez find frequently an orthostatic oliguria in patients with stenosis of the pylorus. This accounts for the nycturia which is observed in the majority of cases.

**Achlorhydria in Pernicious Anemia.**—Hurst found *Streptococcus longus* in the duodenum in all patients with pernicious anemia and degeneration of the spinal cord, and in less than 11 per cent. of the controls. He believes that the achlorhydria allows toxic germs to pass to the duodenum. He treats, therefore, with large doses of hydrochloric acid, eradicates possible foci of infection, and prepares an autogenous vaccine. Sour milk is useful.

**Treatment of Cholelithiasis.**—Théohari finds anacidity or subacidity in 89 per cent. of patients with chronic cholelithiasis. He prescribes for these patients, twice daily, 200 c.c. of a warm solution containing 1.2 per cent. of table salt and 0.6 per cent. of sodium bicarbonate. It increases the gastric secretion and seems to decrease the amount of bile, and to make it more fluid.

## Bulletin de l'Académie de Médecine, Paris

90: 337-384 (Nov. 20) 1923

Influence of Sleeping Sickness on Vital Statistics in French Africa. Augagneur et al.—p. 338.
Child Hygiene. V. Wallich.—p. 342.
*Biologic Effects of Roentgen Ray Irradiation. C. Regaud.—p. 375.
*Prophylaxis of Chloroform Vomiting. R. Blondel.—p. 379.
*Exercises to Strengthen Abdominal Muscles. Laurka.—p. 382.

**The Latent Period in Roentgen-Ray Treatment.**—Regaud says that the most sensitive cells of the epidermis are those of Malpighi's layer. Remaining superficial living cells continue their transformations leading to desquamation, but no new cells develop; finally the epidermis becomes thin and friable and disappears. This latent period represents the time of the wearing off of the epithelium after the elimination of its reproducing layer. The macroscopic latent period following irradiations is not a gage of the susceptibility of the tissue to the rays.

**Prophylaxis of Postoperative Vomiting.**—Blondel states that vomiting after general anesthesia is due to serious injury of the liver by the chloroform. Acute liver insufficiency is the real cause of all accidents which may entail death after general anesthesia. Vomiting after chloroform anesthesia has greatly decreased since fasting and purgatives have been eliminated. His method consists in giving the subject bread, fresh fruits, water, tea or coffee with little sugar, during three or four days, avoiding excess of proteins, fats and alcohol, which activate the liver. Even milk is forbidden. He adds to this 8 gm. of sodium citrate dissolved in one liter of seltzer water and sipped during the twenty-four hours. Bicarbonate of soda can also be used, instead of the sodium citrate. He has been able with this diet to eliminate postanesthetic vomiting almost entirely.

**Exercises to Strengthen Intra-Abdominal Organs.**—Laurka says that in the Orient where people, as a rule, sit, kneel or recline on rugs at home, the abdominal muscles are subjected to constant exercise. Women are rarely affected with prolapse of internal organs, and pregnancy and delivery occur in a much more normal way.

## Bulletins de la Société Médicale des Hôpitaux, Paris

47: 1405-1460 (Nov. 2) 1923

Rectum Perforation in Tabes. P. Pagniez and F. Coste.—p. 1406.
*Syphilitic Rheumatism. H. Dufour and M. Duchon.—p. 1408.
Exophthalmic Goiter with Diabetes and Pulmonary Tuberculosis. L. Babonneix and J. Hutinel.—p. 1409.
Apparatus for Pneumothorax. Amaudrut.—p. 1412.
Instruments for Minor Surgery. G. Rosenthal.—p. 1416.
Mercuric Chlorid Poisoning; Recovery. Sergent and Janet.—p. 1419.
*Tumors and Wassermann Test. M. P. Weil and Weismann-Netter.—p. 1423.
Talalgia of Traumatic Origin. L. Desclaux.—p. 1429.
Bronchial Amebiasis. Petzetakis.—p. 1431.
*Sequelae of War Gas Intoxication. Brelet.—p. 1458.

**Syphilitic Rheumatism.**—Dufour and Duchon state that the more they study syphilitic chronic deforming rheumatism, the more they are surprised to find the close connection existing between syphilis and certain mitral affections which have been routinely classified as being due to previous attacks of acute articular rheumatism.

**Tumors and Wassermann Reaction.**—A positive Wassermann reaction in the cerebrospinal fluid of patients with cerebromeningeal cancers is not rare. Weil cites a case of a cancer of the meninges secondary to a breast cancer in a woman and another of psammoma of the cervical spinal cord with hyperalbuminosis and lymphocytosis—both with no positive Wassermann reaction in the cerebrospinal fluid.

**Sequelae of War Gas Intoxication.**—Brelet bases his conclusions on fifty cases of gassed soldiers examined in 1922-1923. In some the respiratory apparatus revealed nothing abnormal even with radiography. Only three had pulmonary tuberculosis. Thirty-three presented the syndrome of dry catarrh with pulmonary emphysema. Nevertheless, these subjects are in good general condition and bacteriologic examinations have so far always given negative results.

47: 1461-1504 (Nov. 9) 1923

Wassermann Test in Spinal Tumors. Milian.—p. 1461.
Lymphadenoma of the Pericardium. Girard and Pichon.—p. 1464.
Semeiologic Value of Jugular Murmur in Chlorosis. N. Fiessinger and M. Bidegaray.—p. 1469.
Suppurating Tabetic Arthropathy. Pagniez and Coste.—p. 1473.
Anti-Hemorrhagic Serum Treatment of Hemorrhages of Colon. Anduze. —p. 1478.
Herpes Zoster and Varicella. Baur and Kuntzler.—p. 1480.
Intravenous Injections of Calcium Chlorid in Tetany. F. Rathery and R. Kourilsky.—p. 1482.
Short Neck and High Scapula. Crouzon and Martin.—p. 1486.
Progressive Scleroderma with Double Cataract. Guillain et al.—p. 1489.
*Treatment of Diabetes with Insulin. H. Chabanier et al.—p. 1496.

**Treatment of Diabetes with Insulin.**—Chabanier, Lobo-Onell and Lebert report some histories of diabetes treated with insulin. In some of them they observed an effect persisting after they stopped the treatment. In the discussion, Rathery and Labbé spoke very skeptically as to a curative effect, the latter reporting aggravation of the diabetes.

47: 1505-1550 (Nov. 16) 1923

Polymorphous Erythema and Herpes Zoster. Troisier and George.—p. 1505.
*Gastro-Intestinal Linitis. R. Bensaude et al.—p. 1510.
Myasthenia in Relation to Epidemic Encephalitis. Paulian.—p. 1523.
Fibromyoma of Ileum with Fatal Hemorrhage. Boidin and de Gennes. —p. 1524.
Cutaneous Leishmaniasis. A. Panayotatou.—p. 1527.
Pulmonary Gangrene. Léon-Kindberg and G. Mauvoisin.—p. 1532.
Acidosis in Nephritis. M. P. Weil and C. O. Guillaumin.—p. 1539.
Exophthalmic Goiter and Parkinsonian Hemisyndrome. G. Guillain and R. Marquézy.—p. 1547.
Insulin Treatment of Diabetes. H. Chabanier.—p. 1549.

**Gastro-Intestinal Linitis.**—Bensaude, Cain and Oury state that there are cases which can be diagnosed during life with the help of the simultaneous discovery of signs of cancer of the stomach and of the intestine. Much importance must be attached to the diagnosis of rectal metastasis. It does not simply indicate a cancer of the stomach but almost surely cancerous linitis of the stomach and multiple metastases along the intestinal tract. They describe two cases, with illustrations, and review the history.

## Journal de Médecine, Lyon

4: 639-668 (Nov. 5) 1923

*Physiology of White Corpuscles. A. Policard.—p. 639.
Hereditary Syphilis. M. Carle.—p. 645.
Interpretation of Bacteriologic Diagnosis. A. Rochaix and J. Gaté.—p. 655.

**Physiology of the Leukocytes.**—Policard states that among the white corpuscles, monocytes belong physiologically to the blood. The polymorphonuclears and lymphocytes are only transported by the blood, and perform no function in it. They exercise their function in the cellular tissue.

## Paris Médical

313-328 (Oct. 27) 1923

*Transmission of Leprosy by Rats. E. Marchoux.—p. 313.
Sympathetic Trophic Syndromes. Laignel-Lavastine.—p. 317.

**Transmission of Leprosy by Rats.**—Marchoux has been studying the spontaneous leprosy discovered in rats by Stefansky. It resembles practically in every respect the human

disease. Rats inoculated with spleen tissue from a leprous man contracted a disease which was not to be distinguished from their spontaneous leprosy. Other rats inoculated with the spleen from another case have so far remained healthy.

329-368 (Nov. 3) 1923

Pediatrics in 1923. P. Lereboullet and G. Schreiber.—p. 329.
*Prevention of Contagious Diseases. Hutinel.—p. 343.
Epidemic Pemphigus in the New-Born. A. B. Marfan.—p. 353.
Acute Leukemia in Children. Lereboullet and Boulanger-Pilet.—p. 357.
Hyperpyretic Syndrome in Nurslings. P. Lemaire and R. Turquety.—p. 364.

**Prophylaxis of Contagious Diseases of Children.**—Hutinel finds that contagious diseases owe their severity, as a rule, to complications due to secondary infections from ordinary microbic agents. Infections of the respiratory or digestive tract or of the skin, which have a mild appearance and are caused by ordinary micro-organisms, become contagious infections. The virulence of such infections is increased by passages as in experimental inoculations.

## Presse Médicale, Paris

31: 937-948 (Nov. 10) 1923

*Metapsychics. C. Richet.—p. 937.
Hemotherapy. P. Mino.—p. 940.
Rheumatism from Decayed Teeth. M. Nathan.—p. 942.

**Metapsychics.**—Richet, while not accepting the spiritualistic explanations, which he calls childish, restricts his case to demonstrating the possibility of acquiring knowledge by means other than the five senses. He gives no explanation and points only to the analogy with the wireless receptors. He wants to use the two methods of physiology—observation and experiment—on the problem. He gives several examples and quotes several authorities [none of these, however, being prestidigitators, which are considered by Wundt as the only experts on the subject]. The paper is very clearly written.

31: 957-968 (Nov. 17) 1923

*The Senile Brain. C. Foix and I. Nicolesco.—p. 957.

**The Senile Brain.**—Foix and Nicolesco describe the histologic and clinical findings in senile affections of the brain, especially of the corpus striatum.

31: 969-980 (Nov. 21) 1923

*Cervical Ribs and Hypertrophy of Vertebrae. Crouzon.—p. 969.
*Pathogenesis of Hemorrhages. J. Roskam.—p. 972.

**Cervical Ribs and Hypertrophy of Spinous Processes.**—Crouzon concludes that to the conception of cervical rib we must now add hypertrophy—"dorsalization"—of the transverse process of the seventh cervical vertebra. Sequelae of both conditions are the same, and consist especially in sensory disturbances in the arms.

**Pathogenesis of Hemorrhages.**—Roskam states that neither intense thrombopenia nor impairment of blood coagulation alone can produce prolonged bleeding. In hemogenic syndromes, the bleeding time determined at the same time on both ears can differ enormously. It may be normal or nearly normal in one and may reach an hour or more in the other.

31: 993-1000 (Nov. 28) 1923

*Denervation of the Stomach. A. Latarjet and P. Wertheimer.—p. 993.
Insulin Treatment. L. Cheinisse.—p. 995.

**Denervation of the Stomach.**—Latarjet and Wertheimer publish twelve case histories of resection of the nerves of the stomach. They use this method in the "vagosympathetic gastropathies" characterized by epigastric pain and dyspepsia.

31: 1001-1012 (Dec. 1) 1923

Functional Heart Disturbances. R. Lutembacher.—p. 1001.
Preventive Hemostasis in Colpohysterectomy. M. Roussiel.—p. 1005.
*Inanition and Organs of Children. L. Nicolaeff.—p. 1007.

**Inanition and Organs of Children.**—Nicolaeff reports his observations at necropsy of nineteen children who died with most characteristic signs of starvation during the famine of 1922 in Russia. Among his sixty-one cases, 59 per cent. had tuberculosis.

## Schweizerische medizinische Wochenschrift, Basel

53: 1009-1032 (Nov. 1) 1923

*Bacteriophages. R. Doerr.—p. 1009.
*Growth of Tumors. E. Hedinger.—p. 1016.
Intracutaneous Tuberculin Injections. G. Fischer.—p. 1024.

**Bacteriophages.**—Doerr believes that bacteriophages are ferments which attack the surface of bacilli. He and Zdansky were able to produce them by feeding newly hatched chickens with the germs. The paper gives a clear critical idea of the difficulties of the problem.

**Growth of Tumors.**—Hedinger in his necropsies became decidedly impressed with the probability of a predisposition to tumors (benign and malignant, without discrimination). He observed in such individuals at times a hyperplasia of cells in liver and kidneys.

53: 1033-1052 (Nov. 8) 1923

Variability of Spirocheta Pallida. Naegeli.—p. 1033.
*Treatment of Melena. R. L. Rochat.—p. 1042.
Prostatotome. R. Stierlin.—p. 1046.
The Serum in Cancer Patients. A. Kotzareff.—p. 1046.

**Treatment of Melena.**—Rochat considers repeated intramuscular injections of 3 c.c. of the mother's blood (Schloss and Comisky) the best method of treatment for melena of the new-born.

53: 1097-1120 (Nov. 29) 1923

*Nephrectomy in Tuberculosis of the Kidneys. F. Suter.—p. 1097.
*Basal Metabolism and Insensible Perspiration. F. G. Benedict.—p. 1101.
Pernicious Anemia in Young Children. D. Vischer.—p. 1104.
Bronchial Asthma and Hay Fever. L. von Gordon.—p. 1110.

**Nephrectomy in Tuberculosis of the Kidneys.**—Suter discusses his material of 204 nephrectomies performed for renal tuberculosis. He found an immediate mortality of 2.5 per cent., and complete recovery in 60 per cent.

**Basal Metabolism and Insensible Perspiration.**—This address on the results of recent research was delivered at Berne.

## Pediatria, Naples

31: 1137-1192 (Nov. 1) 1923

Influenza in the New-Born. S. Cannata.—p. 1137.
Edema in Child on Deficient Diet. S. Maggiore.—p. 1141.
*Cerebrospinal Fluid in Sick Infants. A. de Capite.—p. 1150.
Nervous Troubles in Typhoid. L. Sabatini.—p. 1156.
Brahmachari's Reaction in Leishmaniasis in Child. Castorina.—p. 1172.

**Cerebrospinal Fluid in Nutritional Disturbances.**—De Capite found an increased pressure of the cerebrospinal fluid in children with nutritional disturbances.

31: 1193-1248 (Nov. 15) 1923

Amebiasis in Children. S. Cannata.—p. 1193.
Reducing Power of Cerebrospinal Fluid in Nutritional Disturbances in Infants. A. de Capite.—p. 1198.
Leukocyte Extracts in Experimental Tuberculosis. A. Ronchi.—p. 1206.
*Syphilitic Septicemia in Nursling. G. Sillitti.—p. 1212.
*Calcium Salts in Treatment of Eczema. M. Flamini.—p. 1221.
Sarcoma of Mesentery in Boy. M. Misasi.—p. 1228.
Leishmaniasis in Infant. V. Tripputi.—p. 1236.

**Syphilitic Septicemia in Nursling.**—Sillitti reports the history of an infant with inherited syphilis and many spirochetes manifest in the blood smears.

**Calcium Salts in Treatment of Eczema.**—Flamini had good results with hypodermic or intravenous injections of calcium chlorid in eczemas of infants. They proved effective sometimes even when oral administration had failed. He injected from 1-3 c.c. of a 5 per cent. solution. He does not recommend intramuscular injections of concentrated solutions, or larger doses.

## Policlinico, Rome

30: 549-604 (Nov. 15) 1923. Surgical Section

*Ascaridiasis of Biliary Apparatus. C. Bertone.—p. 549.
Pararenal Tumors. V. Jura.—p. 566.
Hernia of Biceps Muscle. U. Nobili.—p. 584.
*Diathermy in Surgery. A. Bianchini.—p. 590.

**Ascaridiasis of Biliary Apparatus.**—Bertone says that gallstones were found in 73 per cent. of the 30 cases he has collected, including one from Giordano's service.

**Diathermy in Surgery.**—Bianchini extols the advantages of diathermy in certain surgical cases, the absence of hemorrhage, the brief time required for the electrocoagulation, in comparison with operative measures, and the ease with which the procedure can be repeated in inoperable cases. The drawbacks are the danger of secondary hemorrhage as the eschar drops off, and the danger of injury of bone, with sequestrum formation. A complete cure was realized in nearly all the

twenty cases of tumors, angiomas, keloids or adenoids he describes, but he emphasizes that diathermy is merely an aid to surgery, and cannot take its place.

## Riforma Medica, Naples

**39:** 1137-1160 (Nov. 26) 1923

Physiology as an Italian Science. A. Herlitzka.—p. 1137.
Duration of Effect of Staphylococcus Autovaccines. D. de Blasi.—p. 1140.
History of Surgery of Malformations. L. de Gaetano.—p. 1143.
*Enterotropic Uric Acid. F. Galdi.—p. 1146.

**Enterotropic Uric Acid.**—Galdi claims that he found and reported the presence of uric acid in bile in 1905.

## Rivista di Clinica Pediatrica, Florence

**21:** 641-704 (Nov. 15) 1923

*Postdiphtheric Paralysis. G. Frontali.—p. 641.
Pharmacologic Research in Idem. D. Moggi.—p. 671.

**Postdiphtheric Paralysis.**—Frontali found as a rule an exaggeration of the oculocardiac reflex in postdiphtheric paralysis. It is sometimes followed by allorrhythmias, at other times by acceleration of the pulse rate.

## Anales de la Facultad de Medicina, Montevideo

**8:** 793-886 (Sept.) 1923

*Radium in Exophthalmic Goiter. C. Butler.—p. 793.
*Puerperal Infection. A. Turenne.—p. 814.
*Rare Complication of Ectopic Testis. A. Navarro.—p. 821.
Multiple Cancer. C. Stajano and A. Sáenz.—p. 824.
Ileus in Gynecology. Velarde Pérez Fontana.—p. 830.

**Radium Treatment of Exophthalmic Goiter.**—Butler applied the radium to the skin, and reports 27 cured of the 35 patients with exophthalmic goiter given this treatment in courses of three to thirty-three months; average, twelve months.

**Puerperal Infection.**—Turenne summarizes his long and extensive experience in the dictum that the chances of recovery in puerperal endometritis are inversely proportional to the aggressiveness of our measures, and directly proportional to the way in which we respect the spontaneous tendency toward healing.

**Complications of Ectopic Testis.**—The young man was unconscious and chilly, the abdomen painful, with incontinence of feces. The retrospective diagnosis was torsion of the right testis, inside the abdomen, occurring on his wedding night, and obstructing the outlet to the bladder.

## Prensa Médica Argentina, Buenos Aires

**10:** 381-404 (Oct. 30) 1923

Electrocardiography in Heart Block. Castellano and Faure.—p. 381.
Gonorrhea and Marriage. J. J. Gazzolo.—p. 391.
Bill to Control Medical Advertising. L. Bard.—p. 398. Conc'n, p. 443.

**10:** 429-452 (Nov. 20) 1923

*Operations on the Pituitary. D. del Valle, Jr.—p. 429. Conc'n.
Physiology of Vision at Fovea and of Circulation in the Retina. E. P. Fortin.—p. 449.

**Operation on the Pituitary.**—Several of Delfor del Valle's twenty-eight illustrations are colored, and two cases are described in detail. The outcome was ideal in one of the cases; in the other the operation was successful but infectious complications proved fatal.

## Repertorio de Medicina y Cirugía, Bogota

**14:** 409-445 (Aug.) 1923

*Protein Therapy. G. Uribe Cualla.—p. 411.
Treatment of Hydrocele. J. B. Montoya y Florez.—p. 417.
Acidosis. D. Molano.—p. 421.
*Bacteriologic Diagnosis of Yellow Fever. D. D. M'Cormick.—p. 428.

**Parenteral Protein Therapy.**—In the case described by Uribe Cualla, suppuration had persisted in the left eyelid for months, new fistulas developing in spite of all treatment, including operative measures, heliotherapy and a vaccine. The sinuses seemed normal. Under subcutaneous injections of 5-6 c.c. of milk, the process subsided promptly and completely. The reaction to the second injection was formidable, with a rigor and high fever for two days, and there was a pronounced local reaction each time.

**Bacteriologic Diagnosis of Yellow Fever.**—M'Cormick studied yellow fever in his own person at Bucaramanga recently. During the epidemic, he was able to keep the leptospira alive for three days on wax-sealed slides for dark-field microscopy. He reproduced the disease in guinea-pigs, and found the leptospira in their blood as late as the sixteenth day; in man, the eighteenth.

**14:** 447-480 (Sept.) 1923

*Pericolic and Pericecal Adhesions. A. Echeverri Marulanda.—p. 449.
*Follicular Conjunctivitis in Children. A. Arboleda.—p. 453.
Ovarian Cysts. A. Bermúdez.—p. 457.

**Pericolic and Pericecal Adhesions.**—The three typical experiences described confirm that disturbances from adhesions can induce clinical pictures deceptively simulating gastric ulcer, dysentery or chronic appendicitis.

**Follicular Conjunctivitis.**—Arboleda has been surprised at the rapid recovery under tentative antisyphilitic treatment when inherited syphilis seemed possible in cases of follicular conjunctivitis in children.

## Revista de la Asoc. Méd. Argentina, Buenos Aires

**36:** 453-590 (Sept.) 1923

*Plague Bacillus Bacteriophage. N. Morales Villazon.—p. 453.
*Ferments and Bacteriophagy. C. E. Pico.—p. 466.
Variants of Paratyphoid A Bacillus. A. Bachmann and J. de la Barrrera.—p. 469.
Venom of Lachesis Ammodytoides. B. A. Houssay and J. Negrete.—p. 474.
Diagnosis of Auricular Flutter. T. Padilla.—p. 495.
Insulin in Pneumonia in a Diabetic. P. Escudero et al.—p. 501.
*Sarcoma in Mediastinum. D. Speroni.—p. 505.
Subcutaneous Tuberculin Tests. G. Peco.—p. 507.
Tumor in Pharynx. L. Samengo.—p. 519.
Nasal Complications in Cocainism. D. Massa.—p. 524.
Spastic Rhinitis and Tuberculin. E. Riccitelli and Y. Franchini.—p. 531.
Labyrinthectomy for Diffuse Suppuration. J. Basavilbaso.—p. 553.
Sarcoma in Prostate of Boy Aged 6. B. Maraini.—p. 563.
*Denervation of the Kidney. P. del Pino and A. Astraldi.—p. 568.
Perforation of the Bladder. A. Astraldi.—p. 571.
Phlegmonous Periurethritis. J. Salleras.—p. 581.
Traumatic Rupture of Kidney. L. Arata and J. A. Blaksley.—p. 585.

**Plague Bacillus Bacteriophage.**—Morales Villazon cultivated plague bacilli from living rats and found lively bacteriophagic action. Other animals inoculated from them died, but no plague bacilli could be found after death. He assumes that the plague bacilli had been destroyed by the lytic action. The resulting release of their endotoxins had proved fatal in all except one guinea-pig which survived, notwithstanding inoculation with many times the lethal dose. He remarks that this opens up a prospect for therapeutic utilization of bacteriophagy in plague.

**Action of Pancreatin on Bacteriophagy.**—Pico explains that the action of pancreatin and other ferments is merely to start the lytic action. The latter continues independently.

**The Effusion with Sarcoma.**—Speroni gives a colored plate of the macrolymphocytes which he has found exclusively in the pleural effusion with a sarcoma in the mediastinum.

**Neurectomy of Renal Nerves.**—Del Pino and Astraldi report the complete cure of recurring pains in the right kidney after the nerves in the kidney pedicle had been torn out, the neurectomy supplemented with nephropexy.

## Semana Médica, Buenos Aires

**2:** 913-980 (Nov. 1) 1923

*Pulmonary Tuberculosis in Infants. J. P. Garrahan.—p. 913. Conc'n, p. 997.
Surgical Solution of Hypochlorite. O. Ivanissevich and E. Imaz.—p. 953.
Hydatid Cyst in Liver. R. Biot and G. Segura.—p. 956.
*Cerebrospinal Fluid in the Puerperium. M. L. Pérez et al.—p. 958.
Bile in Peritoneum from Hydatid Cyst. R. Rodriguez Villegas.—p. 963.
"Hospital for Young Infants." F. Schweizer.—p. 972.

**Tuberculosis in Infants.**—Garrahan discusses pulmonary tuberculosis as studied in forty-five infants whose cases are described in detail.

**The Cerebrospinal Fluid in Parturients.**—Pérez tabulates the findings in forty-nine pregnant and twenty-five nonpregnant women, and in parturients. The pressure begins to rise about the fifth month and continues to rise till delivery, when it drops abruptly. It rises with lactation, but returns to normal by the sixth or seventh day after childbirth.

**2:** 981-1048 (Nov. 8) 1923

*Antimalaria Bill. J. J. Montellano.—p. 981.
Fibroma of Broad Ligament. E. Pozzi.—p. 995.

*Syphilitic Arthritis. F. Bustos.—p. 1028.
*Mercurial Nephritis in Infant. E. A. Beretervide and F. Pozzo.—p. 1033.
Biologic Importance of Silica. A. L. Herrera.—p. 1035.

**Malaria in Argentina.**—Montellano discusses the antimalaria bill and the bases for prophylaxis.

**Syphilitic Arthritis.**—Bustos remarks that each case has its individual clinical picture, differing according to the tissues and the lesion. Unlike tuberculous arthritis, it is generally hard, and there is no doughiness. Fluctuation, fistulas, adenopathies, contractures are rare; pain is slight and nocturnal; joint functioning is not much impaired, and the general health keeps good. Hyperostosis is common, and during the early phase the bone sometimes seems less compact.

**Acute Mercurial Nephritis in Infant.**—The mercurial inunctions had been given in treatment of eczema at the age of 1 month. Thirty inunctions of 2 gm. of mercurial ointment had been given daily, and were borne apparently well, but then acutely fatal nephritis developed. The symptoms were of the hydropic type, retention of water, salts, good elimination of urea, and no hematuria. The only basis for the assumption of syphilis had been the mother's two abortions, both of which she confessed had been induced.

## Siglo Médico, Madrid

**72:** 1053-1076 (Nov. 3) 1923

*Sexual Frigidity in Women. G. R. Lafora.—p. 1053.
Brain Abscess from Old Chronic Otitis. Carrasco.—p. 1058.

**Sexual Frigidity in Women.**—This was one of the interchange lectures delivered by Lafora at Buenos Aires. Among the practical points emphasized is the possibility that the main erogenous zone may be in some abnormal location, which escapes discovery. When frigidity develops after a period of normal sexual life, a pituitary tumor or ovarian deficiency may possibly be responsible. Psychic inhibition is the most common cause as psychanalysis has revealed and often helped to cure. He cites Guttzeit's statement that in his thirty years of practice, about 40 per cent. of the married women he has encountered had no personal experience of a sexual orgasm. Others give figures between 30 and 50 per cent., but Steckel insists that frigidity is rare in healthy women, but appears in 50 per cent. or more of the neurotic. Hence he regards it as a factor in the production of neuroses. Lafora quotes from a serious Sanscrit work of the seventeenth century on *Ars amandis*, which the work extols as very important for conjugal happiness.

**72:** 1101-1128 (Nov. 17) 1923

Induced Abortion. Vital Aza.—p. 1101.
History of Transfusion of Blood. A. Pulido Martin.—p. 1103. To be continued.
Children's Play. O. Piñerúa.—p. 1104. Cont'd.
*Discovery of Circulation of Blood. H. R. Marraro.—p. 1107.

**Discovery of the Circulation of the Blood.**—Marraro claims for Spain the discovery of the circulation of the blood in this historical sketch of Servetus. He quotes from his famous "Christianismi Restitutio," published early in 1553, to show that Miguel Servet first described the pulmonary circulation and the purification of the blood by the inspired air. This was sixty years before Harvey. Miguel Servet was a native of Spain but studied theology and medicine in France and Italy. He regarded his physiologic discoveries as relatively unimportant compared to the theologic warfare he was waging, and for which his book was written. Calvin succeeded in having him burned at the stake, May 27, 1553, and with him were burned all the copies of his work that could be found. Only three are known to be in existence now. Marraro remarks that this wholesale destruction of his work enabled others to appropriate a discovery that rightfully belongs to Servet, the Spaniard.

**72:** 1129-1156 (Nov. 24) 1923

*Treatment of Insomnia Without Drugs. C. Juarros.—p. 1129.
Preoperative and Postoperative Roentgen-Ray Treatment. J. and S. Ratera.—p. 1132.
Children's Play. O. Piñerua.—p. 1135. Cont'n.
*Endemic Leishmaniasis in Children in Spain. T. F. Iglesias Garza.—p. 1138. Conc'n.

**Insomnia.**—Juarros has long insisted that sleep is an endocrine function. Gelyi has suggested that some hormone is produced during sleep which is used up in waking hours.

**Leishmaniasis in Spain.**—In this graduation thesis, Iglesias Garza present evidence that kala-azar is endemic in children in certain parts of Spain, in the interior as well as on the Mediterranean coast. He urges investigation of dog fleas as a transmitting agent.

## Deutsche medizinische Wochenschrift, Berlin

**49:** 1407-1432 (Nov. 9) 1923

*Insulin and Decomposition of Sugar. C. Neuberg et al.—p. 1407.
*Action of Insulin. A. Bickel and J. A. Collazo.—p. 1408.
The Ion Problem. H. Handovsky.—p. 1410.
Present Status of Acidosis. A. Lublin.—p. 1412.
Protein Therapy. Weickel.—p. 1416.
Prognosis of Epidemic Encephalitis. Dennig and Philipsborn.—p. 1418.
*Contagiousness of Tuberculosis. I. Zadek.—p. 1419.
Gastroscopy. H. Elsner.—p. 1422.
Leukocyte Counting Chamber. M. Benjasch.—p. 1422.
Trypsin Ointment. J. Saphra.—p. 1423.
Pulmonary Tuberculosis in School Children. Poelchau.—p. 1423.
Birth Rate in Germany and France. Prinzing.—p. 1425.

**Insulin and Decomposition of Sugar.**—Neuberg, Gottschalk and Strauss found an increased amount of acetaldehyd forming as they digested liver cells with addition of insulin. The increase was especially marked when they added carbohydrates to the mixture. The method they used was the "interception process" as it has been worked out for sugar fermentation by Neuberg, Farber and Reinfurth. With this method, Neuberg and Gottschalk had recently demonstrated that the intermediary decomposition of glucose can be "intercepted" at the stage of acetaldehyd. They do not believe that the assumption of the "enol" form of sugar, nor the gamma glucose are of any use for the explanation of this action, because neither formula shows the necessary labile point in the middle of the chain.

**Action of Insulin.**—Bickel and Collazo found that insulin acts favorably on the disturbance of the carbohydrate metabolism which they found in avitaminotic pigeons. The disturbance resembles diabetes in many ways. Insulin prolonged the life of the pigeons and increased the glycogen deposits in the liver and muscles. They believe that the insulin causes polymerization of sugar into glycogen rather than a sudden decomposition of sugar. Bickel acknowledges the American help which allowed him to perform many of the investigations in his series of researches on vitamins.

**Contagiousness of Tuberculosis.**—Zadek proclaims emphatically the danger which is caused by considering positive bacteriologic findings as the only differential sign of contagious pulmonary tuberculosis. Forty-five old persons in his experience claimed never to have any sputum. Nevertheless thirty-four of them (75 per cent.) infected children in their families. Five of the rest had no small children in the family to infect.

## Klinische Wochenschrift, Berlin

**2:** 2109-2156 (Nov. 12) 1923

Sensibility, Especially the Pressure Sense. Von Weizsäcker.—p. 2109.
*Treatment of Gastric Ulcer. B. O. Pribram.—p. 2112.
Disturbances After Nerve Lesions. H. Böwing.—p. 2117.
Ophthalmia in Meningitis. H. Zweig.—p. 2121.
Jaundice of the New-Born. Cserna and Liebmann.—p. 2122.
Bilirubin Formation. A. Sonnenfeld.—p. 2124.
Diphtheria in Wounds. W. Grossmann and L. Radice.—p. 2126.
*Ear Pressure Pain. H. Rosenfeld.—p. 2128.
Dosage of Artificial Sunlight. P. Keller.—p. 2129.
Modifications of Cell Permeability. M. H. Kuczynski.—p. 2130.
*Anaphylactic Shock. P. Schmidt and E. Barth.—p. 2131.
Spontaneous Pneumothorax. Kohler.—p. 2133.
Present Status of the Tonsil Question. C. Hirsch.—p. 2134.
Insulin. H. Staub.—p. 2139. Conc'n.

**Treatment of Gastric Ulcer.**—Pribram had good results with intravenous injections of nonspecific proteins in gastric ulcer. Even deep filling defects disappeared, which shows that this radiologic picture is caused partly by a spasm of the musculature around the ulcer. The foreign proteins change the tonus of the vegetative nervous system, especially the sympathetic. If the patient does not recover in twelve weeks, he advises surgical treatment, preferably resection of the ulcer. It is historically interesting that Rydigyier's paper entitled "The First Resection for Gastric Ulcer" was commented on in the *Zentralblatt für Chirurgie* with the words: ". . . . and, we hope, the last."

**Ear Pressure Pain.**—Rosenfeld finds that Mendel's "auricularis symptom" is not specific for meningitis.

**Anaphylactic Shock.**—Schmidt and Barth found that it was very difficult to compress lungs from guinea-pigs that had died in a typical anaphylactic shock. They believe that a hypersecretion of mucus acts like a valve. They do not believe in any spasm of the bronchi in the shock.

**2:** 2157-2188 (Nov. 19) 1923

*Animal Poisons. F. Flury.—p. 2157.
*Gas Exchange of Blood, and Vitamin B. Faerber and Telleria.—p. 2161.
*Malaria Treatment of General Paralysis. W. Weygandt.—p. 2164.
The Capillaries. A. Stern and H. Hirsch.—p. 2167.
*Innervation of Spasms in Tetany. E. Freudenberg and A. Läwen.—p. 2169.
Epinephrin Reaction. K. Csépai.—p. 2170
*Surface Tension of the Urine. K. Isaac-Kriegler and W. Friedlaender. p. 2171.
Food and Diuresis. W. von Moraczewski.—p. 2173.
"Eosinophilia in Vitro." Hirschfeld and Hittmair.—p. 2173.
"Heredity of Twin Pregnancy." W. Weinberg.—p. 2174.
Sedimentation Test in Nervous Diseases. Paulian and Tomovici.—p. 2174.
*Uric Acid Excretion in Jaundice. H. Ullmann.—p. 2174.
Undescended Testes. F. Windholz.—p. 2175.
Central Dysarthria. E. Leyser.—p. 2176.
Medicolegal Necropsies. Puppe.—p. 2179.

**Animal Poisons.**—Flury points to the possibility of a nonspecific protein action of some of the older therapeutic methods. Leeches may act by the hirudin; stinging nettles and bee stings, which act sometimes favorably in rheumatic subjects, have probably more complicated effects than a mere counter-irritation of the skin. The local hemostatic action of suprarenals has been long known to butchers. A popular Asiatic local hemostatic is prepared from skins of amphibia, and probably contains epinephrin. The Chinese remedy "Senso" from toad's skin, contains bufagin (which resembles digitalis), a local anesthetic, a central stimulant and probably epinephrin. Faust isolated and Wieland crystallized bufotalin from toads. Its constitution is very near to biliary acids which are derivatives of cholesterol. These investigations are the basis for a synthesis of digitalis substances. Cobra poison resembles in most respects the pancreatic secretion of higher animals. It is possible that the toxic substances are only bound to proteins.

**Gas Exchange of Blood and Vitamin B.**—Faerber and Telleria found an increased oxygen intake of children's blood after addition of autolyzed yeast. A similar action was obtained by acids which expelled carbon dioxid from the serum. When they neutralized the autolyzed yeast its action disappeared.

**Malaria Treatment of General Paralysis.**—Weygandt considers the treatment of general paralysis with inoculations of malaria as great progress. He would not hesitate to use the method on his closest relatives or on himself.

**Innervation of Spasms in Tetany.**—Freudenberg and Läwen found that infiltration of nerves with procain or freezing of the nerves prevents the spasms of "phosphate tetany" in dogs.

**Surface Tension of the Urine.**—Isaac-Kriegler and Friedlaender explain that the lowering of surface tension of the urine in cancer cases depends only on the destruction of tissues.

**Uric Acid Excretion in Jaundice.**—Ullmann finds increased elimination of uric acid in some severe forms of catarrhal jaundice. Very high figures speak for acute atrophy of the liver.

## Medizinische Klinik, Berlin

**19:** 1479-1508 (Nov. 11) 1923

*Constitution and Hypertension. R. Schmidt.—p. 1479.
*Food Requirement in Children. K. Hintze.—p. 1483.
Treatment of General Paralysis. O. Fischer et al.—p. 1485.
Pneumothorax. A. Deetjen.—p. 1489.
*Epinephrin Lymphocytosis. W. Rebitschek and A. Selinger.—p. 1491.
Immunization Against Acute Rheumatism. E. Brunthaler.—p. 1493.
Meinicke's Balsam Extracts. G. Elkeles.—p. 1494.
Cardiac and Renal Edemas. F. Lehr.—p. 1497.
Social Insurance and Physicians. Wreschner.—p. 1507.

**Constitution and Hypertension.**—Schmidt reviews his 133 cases of essential hypertension from the viewpoint of the constitution. Heredity is evident. Disturbances of the carbohydrate metabolism are frequent, but their pancreatic origin is not probable. Glucose feeding lowers the blood pressure for about two hours. Rheumatoid symptoms, gout, xanthoma are signs of abnormal metabolism in these patients. The hypertension is frequently preceded by a lowered fatigability which is a dangerous disturbance in the regulatory mechanism, since it leads to somatic and psychic overexertion. This hypersthenic type is also evident in the great fertility of such women. The patients are relatively immune to tuberculosis, and apparently also to cancers, especially cancer of the stomach. Aortalgias and angina pectoris are not infrequent, but they are usually not malignant. The rarity of the discase before the age of 40 shows its intimate connection with changes in the blood vessels. He favors neither the functional nor the anatomic theory of their mutual relation.

**Food Requirement in Children.**—Hintze finds that proteins are not as important as the total caloric value of the food which must not fall below Rubner's norm. If the children (and adults) can afford more food, fat is to be preferred to proteins.

**Spleen and Epinephrin Lymphocytosis.**—Robitschek and Selinger found an increase in lymphocytes in some patients following injections of epinephrin after the extirpation of the spleen.

**19:** 1539-1566 (Nov. 25) 1923

*Measles Associated with Diphtheria. F. Reiche.—p. 1539.
Malaria Treatment of General Paralysis. Fischer et al.—p. 1545.
*Test Meal. I. Boas.—p. 1548.
Treatment of Furuncles. F. Franke.—p. 1549.
Therapeutic Heart Puncture. M. Gang.—p. 1550.
*A German Insulin. G. Zuelzer.—p. 1551.
Chronic Arthritis. A. Muncke.—p. 1554.
History of General Anesthesia. K. Scheele.—p. 1564. Conc'n.

**Measles Associated with Diphtheria.**—Reiche reports on sixteen children aged from 11 months to 5 years with both diphtheria and measles. All but two died in spite of diphtheria antitoxin treatment.

**Test Meal.**—Boas demonstrates the superiority of a test meal over the test breakfast in the examination for hyperacidity. He uses a dish of soup with an egg; 200 gm. of mashed potato, prepared with milk and butter, one roll, and a glass of water. He waits three hours before aspirating the stomach contents.

**A German Insulin.**—Zuelzer reports that he had an active pancreas hormone which he called acomatol ready at the beginning of the war, but he did not use it because it produced spasms in dogs. He attributed this to a toxic action of the preparation instead of recognizing it as an indication of its potency. The war prevented further research. He also had the same intention as MacLeod to prepare the hormone from the isolated islands of fish pancreas, but the medical faculty of the University of Berlin refused to grant him the means for the necessary journey to Naples. His method of preparation is different from that of insulin. The product is titrated against epinephrin.

## Münchener medizinische Wochenschrift, Munich

**70:** 1355-1378 (Nov. 9) 1923

Clinical Medicine and Variations. H. Rautmann.—p. 1355.
Periarterial Sympathectomy. P. Drevermann.—p. 1358.
*Congenital Dislocation of the Hip Joint. A. Schanz.—p. 1360.
Tuberculosis of Urinary System. A. Hübner.—p. 1361.
*Goiter and Tuberculosis. H. Hoffmann.—p. 1363.
Common Errors in Anesthesia. Hönck.—p. 1365.
Regeneration. E. Payr.—p. 1365. Conc'n.
Nonpurulent Encephalitis. H. Curschmann.—p. 1368.
Social Insurance and Hygiene. Von Wilucki.—p. 1370.

**Congenital Dislocation of the Hip Joint.**—Schanz observed ten cases of the working upward of the head of the femur occurring some years after the reduction of congenital dislocation of the hip joint. He emphasizes the necessity for avoiding brutality in the reposition. The patient has to be instructed early that his hip joint will not be able to stand much strain. If the changes occur in spite of it, a supporting splint can prevent their progress. It is very important to recognize the condition in time.

**Goiter and Tuberculosis.**—Hoffmann considers the formation of a goiter as a frequent attempt to counteract tuberculosis. He warns against removal of the goiter, and publishes ten clinical histories to demonstrate the unfavorable influence of the operation on the development of tuberculosis.

Tuberculin treatment is to be preferred. He believes that tuberculosis is a very frequent etiologic agent in goiters, including the exophthalmic form.

**70:** 1379-1400 (Nov. 16) 1923

*Diagnosis of Dysentery. M. Knorr.—p. 1381.
Encephaloscopy. J. Volkmann.—p. 1382.
Encephalography. H. Strecker.—p. 1383.
Treatment of Neuroses. A. A. Friedländer.—p. 1383.
Malformations of the Pancreas. L. Duschl.—p. 1388.
Artificial Ischemia. A. Krecke.—p. 1390.

**Diagnosis of Dysentery.**—Knorr found that Shiga-Kruse bacilli do not contain a catalase. The less virulent dysentery bacilli cause strong decomposition of hydrogen peroxid.

## Wiener klinische Wochenschrift, Vienna

**36:** 737-754 (Oct. 18) 1923

*Diphtheria and Atrophic Rhinitis. R. Kawano.—p. 737.
Phototherapy of Migraine. L. Freund.—p. 739.
Resection in Perforated Ulcers. A. Mülleder and J. Neuberger.—p. 743.
*War Osteopathies. W. Loll.—p. 746.

**Diphtheria and Atrophic Rhinitis.**—Kawano's bacteriologic findings and experiments gave no indication of any causal connection between ozena and diphtheria. The bacilli found in 12 per cent. of his patients were only of the pseudodiphtheria type.

**War Osteopathies.**—Loll believes that the affections of bones observed during and after the war are due to a deficiency of phosphoric acid intake. Analysis of the bone ash and the therapeutic results made this hypothesis probable.

**36:** 773-790 (Nov. 1) 1923

*Liver and Roentgen Injury. P. Neuda and F. Redlich.—p. 773.
*Postoperative Digestive Secretion. G. Stein and E. Fried.—p. 775.
Acute Myeloblastic Leukemia. F. Lasch.—p. 777.
Recklinghausen's Disease with Myomas. R. Tauber.—p. 780.
Goiter Prevention in Austria. H. Schrötter.—p. 781.

**The Liver and Roentgen Injury.**—Neuda and Redlich find that roentgen rays change the protein metabolism, which affects the salt exchanges. Subjects with a healthy liver are able to eliminate the surplus salt. In liver insufficiency, the physicochemical balance of the blood proteins is disturbed.

**Postoperative Digestive Secretion.**—Stein and Fried noted in the first two months after extensive resections of the stomach, a progressive diminution of the gastric juice, leading to achylia or hypochylia. The pancreatic secretion did not decrease.

**36:** 791-808 (Nov. 8) 1923

*Stomach Function Test. K. Glässner and H. Wittgenstein.—p. 791.
Hyperostoses of the Skull. I. Naito and A. Schüller.—p. 792.
Phonetic Troubles in Multiple Sclerosis. L. Réthi.—p. 794.
Hydrops of Knee in Thrombosis. F. Starlinger.—p. 796.
Typhoid with Hemorrhagic Exanthem. L. Thaller.—p. 798.
*Infant Mortality Since the War. S. Peller.—p. 799.

**Stomach Function Test.**—Glässner and Wittgenstein injected the fasting subject with 4 c.c. of a 1 per cent. solution of neutral red, into the buttock, and observed the local elimination of the stain in the gastric secretion. The dye appeared in normal subjects in twelve to fifteen minutes. With hypersecretion of acid, it appeared in eight minutes or even earlier; hypoacidity prolonged the time to twenty-five or forty-five minutes or more. There was no elimination in achylia even after an hour and a half. Thus this test confirms the theory of the influence of acidity on the elimination of the dye.

**Infant Mortality Since the War.**—Peller noted that the decrease in the mortality of infants in Vienna during the war was correlated to the inadequate milk supply. This forced many mothers to wetnursing. The total mortality of legitimate children has decreased since the war, though the mortality in the first week of life is greater than before.

## Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

**86** 1-220, 1923

Principles for Covering Raw Surfaces in Pelvis with Peritoneum. O. Beuttner.—p. 1.
Rare Form of Ovarian Carcinoma. R. Zimmermann.—p. 19.
Changes in Female Genitals in Lymphatic Leukemia. O. Brakemann.—p. 23.
*Conservative Myoma Operations. H. H. Schmid.—p. 36.
Histologic Changes in Ovary During Pregnancy. K. M. Walthard.—p. 74.
*Syphilis and Childbearing. E. Klaften and W. K. Kalman.—p. 123.
Experiences with Kielland Forceps. Von Schubert.—p. 134.

**Conservative Myoma Operations.**—Schmid was able to leave the uterus functionally fully capable in eighty-eight of his 722 operative cases of uterine myoma in the last thirteen years.

**Syphilis and Pregnancy.**—Klaften and Kalman assert that nonspecific Wassermann reactions sometimes occur in the pregnant, but it was complete in only one nonsyphilitic woman of the 912 tested.

## Kitasato Archives of Experimental Medicine, Tokyo

**6:** 1-99 (Aug.) 1923. English Edition

*Hemolytic Streptococci. K. Ando and C. S. Chen.—p. 1.
Atypical Hemolytic Streptococci. K. Ando.—p. 30.
Occurrence of Hemolytic Streptococci. N. Ito.—p. 39.
*Precipitation in Syphilis. K. Taoka.—p. 49.
Catalase of Bacteria. I. Ohtsubo.—p. 61.
Aggressins. I. Ohtsubo.—p. 82.

**Hemolytic Streptococci.**—Ando and Chen describe a standard blood agar plate method for differentiation of typical and atypical (beta type) hemolytic streptococci.

**Dissolution of Precipitates in Syphilis.**—Taoka found that passing carbon dioxid through the fresh serum or addition of four hundredth normal acid inhibits the dissolution of syphilitic precipitates. The dissolution is due to the alkalinity and not to the complement of the fresh serum. Inactivation of the serum lowers its alkalinity.

## Casopis lekaruv ceskych, Prague

**62:** 1105-1132 (Oct. 20) 1923

*Congenital Deficiency of Otoliths. A. Precechtel.—p. 1105.
*The Bone Marrow in Thrombopenia. V. Jedlicka.—p. 1108. Conc'n, p. 1133.

**Congenital Deficiency of Otolithic Apparatus.**—Precechtel describes nine cases of probable congenital defect of the otolithic apparatus. In all of them the position at birth was abnormal (pelvic or transverse). The infants learned very late to sit up and to walk. The speech development was also late. In two cases heredity was apparent. The observations confirm the theory on the regulation of the fetal position by the vestibular apparatus.

**The Bone Marrow in Thrombopenia.**—Jedlicka describes the history and microscopic findings in a case of purpura with thrombopenia and inflammation of the gums. The spleen did not contain many platelets. The megakaryocytes in the bone marrow were changed. He draws a parallel of the condition with that in aplastic anemias.

**62:** 1133-1160 (Oct. 27) 1923

*Coloboma of Macula Lutea. J. Janku.—p. 1138. Conc'n.
Amebic Dysentery. S. Basar.—p. 1148.
Survey on Insulin. Kimla.—p. 1149. Cont'd.

**Coloboma of Macula Lutea.**—Janku reviews the literature and describes a case of congenital coloboma of the macula lutea. It was probably caused by protozoa which were evident in the sections. Thirteen photomicrographs illustrate the findings.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

**2:** 1597-1696 (Oct. 20) 1923. Souvenir Number.

*History of Medicine. E. C. van Leersum.—p. 1597.

**The Netherlands Society for the Study of the History of Medicine, Physics and Mathematics.**—During the ten years since this society was founded it has restored the tomb of Avicenna and organized centennial celebrations in honor of Vesalius, Dodoens, Boerhaave, Jenner and Pasteur; it subsidizes the journal *Janus*, and has brought to light many interesting historical articles and pictures, and organized historical exhibitions and a permanent museum. Thirty papers presented at the recent tenth anniversary meeting are published. Among them are the following:

**History of the Compensating Hypertrophy of the Heart.**—Neuburger ascribes to Beau of Paris, in 1856, the conception of compensation in heart disease. But Corrigan in 1832, and the Dutch Blancard, 1688, had explained the hypertrophy as a reenforcing process.

**Pasteur's Precursors.**—Van Dieren quotes Linnaeus, 1750, as a precursor of Pasteur in the theory of infection, and also Heule, 1840.

2: 1725-1824 (Oct. 27) 1923

Action of Ouabain on Frog Heart. S. de Boer and Delprat.—p. 1726.
Structure of Cell Protoplasm. F. de Moulin.—p. 1734.
Coagulation of Blood an Agglutination Process. E. Hekma.—p. 1743.
*Blue Sclerotics. H. Bolten.—p. 1747.
Volvulus Due to Meckel's Diverticulum. F. Croes.—p. 1751.
Pathogenic Significance of Meckel's Diverticulum. W. J. Bais.—p. 1753.

**Blue Sclerotics.**—Bolten gives the details of two families with blue sclerotics, and of three isolated cases. He has also encountered several neurotic patients with a bluish cast in their sclerotics. In all the cases there were trophic and vasomotor disturbances, but the bones were not abnormally brittle.

2: 1825-1904 (Nov. 3) 1923

The Eyelid Margin. E. Marx.—p. 1829.
The Systolic and Diastolic Pressure. J. T. Peters.—p. 1844.
Hemolytic Jaundice at Birth. E. S. Frank.—p. 1849.
Dangers from Open Sale of Medical Articles. J. W. T. Willink.—p. 1854.
*Uroptysis. H. van der Speck.—p. 1855.
Placenta Detached by Short Cord. J. van Dongen.—p. 1857.

**Uroptysis.**—Van der Speck's patient, a young man, coughed up urine in the course of pneumonia, and necropsy revealed a supernumerary kidney in the thorax.

2: 1905-2016 (Nov. 10) 1923

Blood Transfusion. H. L. M. van der Hoff.—p. 1906.
Treatment of Menacing Abortion. J. A. van Dongen.—p. 1927.
*Hematoporphyrin in Rickets. E. C. van Leersum.—p. 1931.
Transthoracic Esophageal Fistula. P. A. Vos.—p. 1940.
Spontaneous Correction of Harelip. A. W. Ausems.—p. 1942.

**Influence of Hematoporphyrin on Rickets in Rats.**—Van Leersum induced the rickets by feeding young rats with McCollum's 3,143 diet. Then he injected them with from 3 to 10 mg. of hematoporphyrin hydrochlorid, in an alkaline solution, repeating the injections at interval of a few days. In some of the rats he amputated one leg in order to compare the structure of the bone before and after the injections. McCollum's line test and other tests confirmed the unmistakably favorable influence from the hematoporphyrin on the deposits of lime. The rats were kept in a dark basement. Some of the rats died the day after the hematoporphyrin injection, and all the others lost weight, and none displayed appetite. One white rat lost 32 gm. in seven days, during which 0.005 gm. had been injected three times.

2: 2017-2120 (Nov. 17) 1923

*Spirochetes in Amsterdam Rats. W. Schüffner and W. A. Kuenen.—p. 2018.
Periarteritis Nodosa. W. H. J. Ivens.—p. 2027.
*Torpid Abscess in Chest Wall. T. de Waard.—p. 2045.
"Treatment of Inflammatory Tuberculosis." J. de Keersmaecker.—p. 2049.

**Spirochetes in Rats at Amsterdam.**—The spirochetes of infectious jaundice have been found in 1918 and since in 27 per cent. of the 207 rats examined at Amsterdam. Typical cases of Weil's disease are rare, but possibly mild forms of jaundice or unclassified pyrexias may be attenuated infection with *Spirochaeta icterohemorrhagiae*.

**Cold Abscesses in Thorax Wall.**—De Waard traced the abscess to spondylitis in ten of his forty cases in the last eight years. A torpid abscess in the back always suggests possible vertebral disease, or tuberculous glands in the neck or mediastinum, or a tuberculous process in the muscles. Caries of a rib is always in the shaft, and usually in the form of a spina ventosa; this was never observed in his cases. In operating, a possible tuberculous process in the pleura or clavicle or sternoclavicular joint should all be considered, as also a syphilitic origin. Actinomycosis should likewise be borne in mind. Puncture and roentgen exposures gave excellent results; hospital care and large operations are superfluous. In his cases, the roentgen-ray treatment had to be kept up from a few months to a year and a half.

## Acta Pædiatrica, Upsala

3: 1-99 (Oct. 15) 1923

*Hemoglobin and Cell Volume in Children. P. Drucker.—p. 1.
*The Heart in Spasmophilia. E. Schiff.—p. 57.
Nutrition Disturbances with Artificial Feeding. E. Lövegren.—p. 72.
*Displacement of Heart in Pneumonia. A. Wallgren.—p. 81.
Birth Lesion of Spinal Cord. H. Belfrage.—p. 91.

**Hemoglobin and Cell Volume in Children.**—In examining blood drawn from small children, Drucker found higher hemoglobin values when he incised their skin with a comparatively blunt instrument than when a sharp cataract knife had been used. With the sharp knife there were no differences between the blood taken from the foot or ear, and the figures were remarkably constant in the same individual. The hemoglobin decreases in the first two months of life, and remains at 80 per cent. during the first year. The cell volume is the same as in adult women. The proportion between the hemoglobin percentage and the cell volume is high in toxic gastro-enteritis, stenosis of the pylorus and chronic dyspepsia. He believes that this is a sign of an increased osmotic pressure of the plasma ("drying up"). (In English.)

**The Heart in Spasmophilia.**—Schiff studied the roentgenograms and electrocardiograms in spasmophilic children and in puppies with experimental tetany. The hearts were large and the T wave was very pronounced. There were, however, no signs of insufficiency of the circulation. Sudden death in spasmophilia is due to the heart, while slower deaths are attributed to a paralysis of respiration. (In German.)

**Displacement of Heart in Pneumonia.**—Wallgren finds in most cases of pneumonia in infants a shifting of the heart and mediastinum to the diseased side. This is important in diagnosis to exclude pleural effusion.

## Hospitalstidende, Copenhagen

66: 621-640 (Sept. 5) 1923

*Zinc Ion Treatment of Otitis Media. V. Schmidt.—p. 621. Conc'n, p. 641.

**Zinc Ion Treatment of Otitis Media.**—Schmidt reports fifty-one cured and twenty-seven improved in ninety-three cases of acute or chronic otitis media treated by electrolysis with zinc, as he describes, and gives a colored plate of the findings. The course was much shortened, and intractable suppuration in the tube healed.

## Hygiea, Stockholm

85: 881-912 (Nov. 15) 1923

*Thyroid Insufficiency. A. Josefson.—p. 881.

**Thyroid Insufficiency.**—Josefson's profusely illustrated article sustains his former assertions that hypothyroidism may require larger doses than those habitually used. The goiter may be a sign of deficient function, Nature trying to compensate for the deficiency. Some of the largest goiters in his experience promptly subsided to normal size under adequate thyroid treatment. Inspection of the capillary circulation will show the rate of progress. He urges systematic thyroid treatment of pregnant and nursing women if they or other members of the family have ever shown evidence of hypothyroidism. In 1914 he called attention to the white dermographia, followed by red, when very dilute epinephrin (1:200,000) or pituitary extract was applied to the skin for a minute, as a gage of the hormonal status and consequent sensibility of the skin. This test can likewise be applied by the Pirquet method, as Gröer and Ascoli have confirmed, or intradermally.

## Ugeskrift for Læger, Copenhagen

85: 843-864 (Nov. 29) 1923

Sanitation of Summer Resorts. J. Lemche.—p. 843.
*Fatalities During Boxing. W. Munck.—p. 848.
Medical Examination of Intoxicated Motorists. J. Fog.—p. 856.

**Fatalities During Boxing.**—Munck reports two cases of fatal subdural hemorrhage during a pugilistic encounter. Both young men were previously healthy. Kohlrausch has recently reported two similar cases. In all these four the boxing match was being conducted in accordance with approved rules. The knock-out blow on the lower jaw seemed to have been responsible for the subdural hemorrhage. In one of the cases the head had hit the floor with great force, and this was the only one in which the hematoma was bilateral. In all the cases the men promptly regained consciousness, and resumed the fight for another round or two before they collapsed. Three died within an hour; the other not until the next day.